

METHOD

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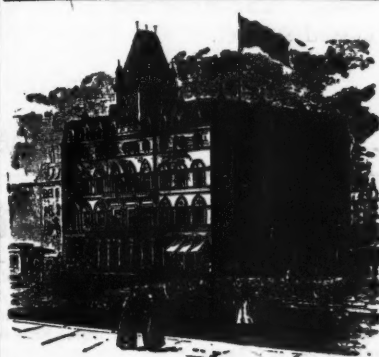
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Aims in Nature Study.

There has been a time when the teacher of science was the exponent of the marvelous; when the endeavor was made to arouse interest by the presentation of the remarkable, and a subject of study was desirable in proportion as it was unique and at variance with the pupil's experience. The child learned much of the rhinoceros, the toucan, and the baobab tree, but nothing of squirrel, bluebird, or oak; so he very naturally came to the conclusion that he lived in a very stale and uninteresting part of the world, and that all other parts lived under a very different regime. No better method could have been conceived of keeping the pupil's attention off legitimate objects of study than this old way of turning his mind to foreign wonders which he could never hope to see. The result, of course, was to make dependence on books paramount in all work of this character and this tendency has descended to us as a burden which we are not yet entirely freed from.

The science reader of to-day deals, it is true, with objects within the student's possible experience, but however attractive it may be made with pictures, and however useful it may be as a reader, it must be borne in mind that such work is not nature study but book study. The effects of such reading are radically different from the discipline which should be gained in science study. Then again we are familiar with the ready-made lesson in nature study. The questions are there and the answers to be given by the pupils follow and the whole affair is very logical and effective on paper. In practice, the concrete pupil who confronts us most pertinaciously refuses to word his answers just like the abstract pupil in the lesson, and we come once more to the usual conclusion that we have an unusually stupid class this year.

In the nature of things such lessons can be only suggestive, for the science teacher does not exist who can write out a lesson which can be profitably given to a class with which he is not acquainted. Nature study is a matter of experience, discipline, and taste, and no two classes are so similar in these qualifications that they may be treated in the same way. The work must be so adapted as to remedy the prevailing weakness of the class, which in one case may be inability to concentrate the mind on the essential or fundamental idea to the exclusion of irrelevant details and in another case may be an over willingness to answer questions as the pupils think the teacher desires, without regard to fact.

A Unifying Plan Needed.

In undertaking to teach nature study, it is a matter of great importance to fix clearly in mind the object which we wish to attain and to hold this continually before us, so that each lesson may have a definite purpose and form part of a general plan. Even tho the object we agree upon should not be the highest and best possible, yet the fact that it gives unity to our work makes it valuable and opens the way to better knowledge. One of the greatest faults of science teaching in the schools certainly is the dissipation of energy that results from the lack of a unifying plan on the part of the teacher. In consequence, tho many apparently effective individual lessons may be given, they are not directed to a common end and have no cumulative effect, so the teacher loses confidence in the results and the work becomes loose and rambling. We shall examine some of the reasons advanced for the

study of nature and endeavor to separate those that are primary and essential from those that are secondary and incidental.

Utilitarianism too Narrow for a Basis.

A plea very often advanced is the useful knowledge which is gained in the pursuit of this study, but most of us would agree that under this argument a great part of our most valuable work would fail of justification. Certainly we should impart such knowledge of the laws of nature as will increase the happiness of the individual by enabling him to obey those laws, but beyond this, it is not any definite list of facts which is valuable, but the habits of thought, the attitude of the mind toward knowledge, which work of this character induces. In all lines of activity mere knowledge of facts is at a discount; the walking encyclopedia is no longer respected; the man is wanted who can observe the conditions which exist about him, form a correct judgment, and proceed to act on it with promptness and decision. Plainly, knowledge has a high value in enlightening the judgment, but knowledge is infinite and we can not hope to stock a pupil's mind with just the set of facts which will be of most use to him in later life.

Another phase of the same utilitarianism presents for consideration a rather more difficult question as to the kind of work which should be presented under different conditions; as, for instance, whether the work of children in a manufacturing district should be largely directed toward a study of those industries as the best preparation for life. If the object of education is rounded development of the pupil, we can hardly agree that such a restriction of the field would be consistent with pedagogical principles. Indeed it would seem that in proportion as one phase of the study is prominent in the pupil's environment, so much the more is it the province of the school to emphasize those phases which would otherwise fail to influence him. Specialism is not the object in nature study, just as manual training does not aim to make carpenters, or as drawing does not attempt to train artists, or music to produce musicians. It may be found advisable to take advantage of the pupil's interest in forces and objects most familiar to him, but the work should aim to broaden the experience and not simply to develop it along a single line.

Development of the Imaging Power.

A notion of science more fruitful than this idea of the useful is involved in the aim of educating the child's power of imaging, of developing ideas corresponding with external realities, and of making these ideas more exact and adequate. The ability to call up before the mind correspondences to externality is the basis for education of the imagination, a means of enjoyment of literature and of great utility in practical life. When we read a beautiful description, our enjoyment and appreciation must depend on the vividness and adequacy of the images produced in the mind. Take, for instance, the lines from *Evangeline*:

"Silently, one by one, in the infinite meadows of heaven
Blossomed the lovely stars, the forget-me-nots of the angels."

Those children who have studied the spring flowers in the woods, who have spent evenings looking at the stars, and anxiously hunted up the Great Bear, the Pole star, and Orion, will appreciate the beauty of this passage, because to them will be conveyed the image which the poet had in mind. Therefore, as experience is the basis of

imagination, it is desirable that this power of imaging be developed, but if we make of this a principal aim in the study we find a lack of interest. Mere study of the properties and qualities of objects is most barren and it is necessary to find some hold on the interest which can command the attention and give purpose to the study.

Sense Training Merely an Incidental Purpose.

A special advantage of nature study and the one most emphasized by many science teachers is sense training or development of the power of observation. When this is made a primary purpose in the work it generally leads to the study of the form, color, and other properties of individual objects or comparisons of two or more objects and descriptions of them, with the idea of increasing the observing power, that is, developing readiness and accuracy in learning the properties of things. This amounts only to opening up avenues to the mind and giving it the power of gaining accurate ideas of its environment. But the only benefits which such ability can afford to the pupil must come from the recognition thru observation of the laws governing phenomena. Knowledge of these laws must be based on observed differences and resemblances in the properties of objects. Therefore in placing an object before a child and requiring attention to its properties for the mere sake of sense training, we are reversing the natural order of things. When a pupil attends to a quality of an object, it should be for a purpose and not merely for discipline. How little living interest there is in observation for the sake of observation, any one who has tried it can testify. There should always be some end in view to give life to an investigation; always some inquiry on foot to sharpen the pupil's curiosity so that all observation may furnish an immediate basis for judgments. Thus sense training is an incidental rather than a primary purpose of nature study; but is highly important, because indispensable.

What has been said of observation for the sake of observation may be said of description for the sake of description and this brings us to another important purpose of science work and one which is often so emphasized as to become the chief end; that is, training in expression. Teachers often have lessons, the whole object of which is to give something to talk of, and the language drill is more prominent than the subject matter of the lesson. When we find that a class of forty pupils has produced a set of forty science papers which begin with the same sentence and from first to last express the same ideas in the same way, we must come to the conclusion that the so-called science lesson was not a science lesson at all, but a language drill. At the same time it is true that nature study furnishes valuable opportunities in the direction of expressing ideas in words, but if the work is to be valuable even as language work, these ideas must be undeniably present, the pupil must seek his own forms of expression and not have them forced upon him from without.

Searching for Laws.

No one of the aims we have considered is to be regarded as the fundamental purpose of nature study. It is a trite saying that every child is a born naturalist, and if this is practically true, the child's study of nature should give us a hint as to what we should attempt to accomplish in that direction. The young child receives no formal object lessons and yet he becomes familiar with his surroundings and instinctively does a vast amount of observation work, and not mere disciplinary sense training either, but observation that has made him master of many natural laws. The question "Why?" is always on his lips and from this word we learn the true aim of science. Whenever an experience impresses a new idea on the normal child, his mind immediately seeks for another idea standing in a certain relation to this one, or, in other words, instinctively recognizes that events do not stand alone, and looks beyond them for their causes. Now this search for cause is a search for natural law, for unless the cause when found could be classed with other causes, that is if each event had its individual and unique

cause, this instinct would be useless, and could not exist. We seek for causes that we may group together in the mind things apparently different. Thus what was external chaos to the child gradually became synthesized as the child recognized the laws governing phenomena.

The True Aim.

Hence the true aim of nature study must be to continue the synthesis instinctively begun by the child by leading him to gain thru further observation a deeper and clearer knowledge of the laws of nature. The pupil must arrive at the knowledge of laws thru his instinctive desire to reach the causes of phenomena, and this search for law is the true study of nature. If it be true that this is nature's method of developing the child before he goes to school, we shall find the same method, consciously followed, to be the line of least resistance in later education. Because it is nature's way it arouses an enthusiasm which can never spring from work which aims simply at sharpening this or that faculty. Thus nature study should aim not at the object before the child, but at the laws which are impressed upon the object. Things should be studied not in themselves, or they are dead; but in their history, and as a part of a process or chain of causes and effects. It is not discipline of the faculties we desire to attain, but the development of a normal relationship with nature.

The disciplinary value of the study is certainly of extreme importance and too much attention can not be given to it; but this is a matter of method rather than aim. The aim should be to give a pupil the proper attitude toward his environment; the method should take into consideration the power which proper pursuit of this aim may give. The aim is one, but the method may vary with the teacher and the occasion.

The child is thus brought to feel himself to be what he really is, a part of nature and the inquisitiveness of the child, instead of being suppressed, is encouraged to develop naturally into the consciously directed inquisitiveness of the student. I regard this attitude toward nature as of greater importance than the discipline which the study gives, because, if the taste and attitude are present the discipline will infallibly come; not, perhaps, in the easiest way, but none the less surely; while the discipline may be given without this attitude toward knowledge as a result. Our tastes, rather than our abilities, determine what we shall become, and the teacher of nature study has succeeded who has given his pupils an abiding love for nature and that independent, aggressively inquisitive attitude which such a taste develops.

Ethetic and Ethic Effects.

The effect of such successful work in science is far reaching and extends to all school work. Develop independence in nature study and you can't keep it from showing in grammar and history, and not only that, but there is an ethical side to it of the highest importance. Habitual dealing with the unchanging laws of nature must develop truthfulness, for tho a student may deceive his teacher with a dishonest piece of work, in dealing with nature, fraud is impossible. Nature refuses to be cheated. Again the happiness of a human being depends on his power of appreciation, and in opening the child's eyes to the beauty of nature we are giving him a life-long means of enjoyment.

A paper read at the November meeting of the "Octavius Club," Chicago, by James E. McDade, Fallon school.

THE SCHOOL JOURNAL, E. L. Kellogg & Company, New York, celebrates its silver anniversary by issuing a magnificent number of 128 pages. For twenty-five years this journal has been one of the most powerful forces in the development of educational sentiment in America, and thousands of teachers now in middle life owe their first inspiration to its columns. It deserves to rank among the great journals of the last quarter of the century. May it live thru another twenty-five years of usefulness, carrying its weekly message to thousands of teachers and school officers in all parts of our great country.—From an editorial in the July *North Carolina Journal of Education*

The Oak: *Quercus*.

By L. F. GRIFFIN, New York.

Eastern forests contain trees of two general classes, deciduous and evergreen. The former put forth leaves in the spring, drop them in the fall, and are bare during the winter. This adapts them to regions of heavy winds since their naked limbs only moderately resist the air, allow it to pass thru them easily. Evergreens retain their foliage thruout the year. But they do not, as many suppose, keep the same leaves year after year. They all have special seasons when the old foliage is cast off and new leaves grow. Usually the period is in the early summer. Some few drop all their leaves every season; most only a part. The leaves are narrow, often mere needles. Yet the evergreens offer much more resistance to the winter wind than the bare branches of the naked deciduous trees.

Further marked differences between the two varieties are found in their sap, wood, and fruit. In deciduous trees, the sap is usually abundant, differing but little from water, tho it carries some substances in solution, sugar as frequently as anything, and moves in great abundance at



special seasons. The sap of evergreens, is limited in amount, is pitchy or gummy, and moves less freely. The wood of deciduous trees is commonly hard and tough, varying much in different trees of the same class. It has marked hardened places or plates which run from the center outward, like radii of a circle—called medullary rays—and generally shows considerable difference in color between heart wood and sap wood. That of the evergreens is much softer as in the white pine, scarce shows the medullary rays, has heart and sap wood of nearly the same color, and is not nearly so tough as the wood of the deciduous trees. The fruit of the deciduous trees is commonly large, is often a nut and carries considerable nutriment for the young tree. That of the evergreens is very small, is often enclosed in a cone and can sustain the young shoot hardly a day.

These general differences need to be clearly understood and remembered, since they largely determine the localities of the trees and the uses of their several woods. Certain species of both classes are very long lived and grow to great size. Others are limited to a few years and never attain much size. The value of a wood as timber depends also upon its freedom from decay.

The oaks include many species of trees that grow in this country from Canada to the isthmus of Panama. Most of them are stately trees, some species being very long lived and occasionally growing to an immense size, tho two or three are little more than bushes. With a very few exceptions, the oaks are deciduous, and they blossom and fruit upon a single plan. Their leaves are large and shiny, sometimes, as in the red oak, divided into leaflets nearly to the midvein. Most of them bear smooth leaves, but a few have rough and hairy petioles or blades. The foliage is abundant, and when the trees are not too much

sheltered, oaks furnish a thick shade. They commonly grow with the terminal bud steadily pushing upward, so that when no accident occurs to destroy it, the main stalk will persist to the top of the tree. Thus the general outline of an oak tree becomes roughly spherical.

Blossoms and Fruit.

Oak blossoms develop very soon after the leaves. The sterile or staminate blossoms grow as long, scaly tassels near the ends of the small twigs. The stamens are covered by scales until the pollen is ripe, when they turn back exposing the stamens, and the pollen is discharged in great abundance to be carried by the wind to the pistillate blossoms. These are placed a little further back on the twig and closely resemble buds, but they are usually of a different color. The pistil is really a compressed ovary from which a short style rises. The ovary contains a number of minute ovules only one of which develops. The fruit is a single acorn which is held in a scaly cup or capsule.



Common Species.

Those found almost everywhere, the varieties, which are abundant, are somewhat modified in different localities. Besides, the most common names, given from the color of the wood, as white and red, are applied to different species in various sections. So careful comparison alone can determine the range of any species. The white oak (*Quercus Alba*) is common to New England. But the pin oak (*Quercus Illecefolia*) is called white oak in certain of the Central States; and the dwarf oak, of Rhode Island, seems to be identical with the poison oak, of Illinois.

The White Oak. (*Quercus Alba*.)

This is probably the most widely distributed American oak. Its wood is hard and tough, of a light color, the sap wood being a distinct pearly white, and it is a very long lived tree. Many white oaks are said to have been found six feet and more thru. Such large oaks have disappeared and white oaks much exceeding eighteen inches



WHITE OAK.

in diameter are now hard to find. The wood of the trunks of these very old trees was too hard and tough for use, actually breaking the teeth of the saws when an attempt was made to cut them into lumber, and the only way of splitting was by the use of gunpowder. But the smaller trees are readily split, and the heart wood furnishes a tough material for small tools, as ax and hammer handles, canes or goad sticks. Sometimes it was used by the early settlers as staves for butter firkins and piggins.

The acorn of the white oak is small, barely resting in the capsule, and is sweet to the taste. Dried, hulled, and reduced to meal, either by pounding in the mortar or rolling with a stone roller, it furnished the Indians their "acorn bread." Squirrels and wild hogs prefer these acorns to any other forest nuts excepting chestnuts.

The large leaves are much split into rounded leaflets, somewhat pointed, and they remain on the tree when dry. Only the fiercest winds of winter avail to strip the trees. On the smaller ones, sheltered by larger growth, they remain until pushed off by the new leaves in the spring. This renders the white oak conspicuous in the winter.

The range of the tree is so extended that it seems adapted to great varieties of soil, tho it flourishes best upon decomposed granite. Yet it is exceedingly chary of its surroundings. Abundant in one town, in the next it may be lacking, tho no difference can be detected in soil, climate, or drainage. Some very obscure condition essential to its growth is lacking, and the young trees fail to thrive.

Red Oak (*Quercus Rubra*.)

Probably the most rapid grower in the family is the red oak. It is a large and spreading tree, but more con-



RED OAK.

cal in shape than the white. Its leaves are larger, and the ends of the leaflets more rounded. The wood is softer, the pores very large, and it is full of sap which is removed with difficulty by drying. Indeed, it is said that old red oak timber which has done duty for a hundred years or more in frames of buildings, still has sufficient moisture in its pores so that this stands in drops upon the end when the stick is burned.

The red oak grows to trees nearly as large as the white, but it is apparently shorter lived. Its heart wood is red in color, easily split, and is specially valuable for making strong staves, such as are required for molasses hogsheads or alcohol barrels. It has been much used as planking for the decks of vessels. The fruit is a large bitter acorn, very abundant, and it has mainly furnished the food for swine sometimes known as "mast."

Other Species.

The black oak (*Quercus Nigra*) is characterized by the rich yellow, or orange, of its inner bark, and the dark color of the wood. It is a gnarled and scrubby tree, rare in the Eastern part of the country, but abundant in the Central region. Its wood is rather soft and too brittle for timber.

The post, iron, or burr oak (*Quercus Obtusiloba*) is common in the interior of the country, with a wood much like the white oak, but softer. It furnishes good timber for many purposes, especially fence posts. Its fruit resembles that of the white oak, but it is larger, not as sweet, and sets much deeper in the capsule.

The live oak (*Quercus Virens*) is the only evergreen va-

riety common to parts of the United States. Its wood is specially lasting, moderately tough, and very heavy. It is highly valued for ship-building.

Oak Timber.

Oak wood is too hard for general uses. Of late, much interior finish, and house and office furnishings, have been



BLACK OAK.

made of different kinds of oak, quarter sawed and finished to show the natural grain of the wood. In earlier days, oak timber was used for the frames of all large buildings, as halls and churches; and "knees" were hewn from the twisted and knotted portions of white and red oaks for the frames of ships. It was the peculiarly tough oak which grew on the side of Kearsarge mountain in Merri-mac county, New Hampshire, that made the famous "Old Kearsarge" so strong and stanch. But this use of oak timber is necessarily a thing of the past.

Famous Oaks.

The Charter Oak, at Hartford, Connecticut, is the only oak that has gained special fame in this country. The tree was very old when the country was settled, since it was of the largest size and already hollow. It was noted as the preserver of the liberties of the colony. When Governor Andros, carrying out his general system of oppression and destruction of chartered rights demanded of the Connecticut legislature their charter, in 1682, Capt. Joseph Wadsworth blew out the lights in the hall, seized the precious charter and hurried away. So long as there was danger of its recall, the charter could not be found, for it rested safely in the hollow of the old oak tree whence it came when needed. The oak stood, in a protected square, until 1856, when being blown to pieces by the wind, the part left standing was cut down and made into souvenirs.

Two oaks in England are known to be of very great age, for they antedate history. One is the Newland oak, in Gloucestershire, known for centuries as "the great oak," and perhaps the largest in the world. It measures over forty-seven feet in circumference, five feet from the ground, and it does not seem to have increased in circumference more than one or two inches in the last two centuries. It maintains its vigor, altho hollow at the base. The other is the Cowthorpe oak, in Yorkshire, near Weatherby. This is thirty-eight and one-half feet in circumference and is not known to be hollow. Both were objects of worship in the early history of the island and still retain much of their former reverence.

The oak was a religious emblem in Druidical worship, in two forms. The mistletoe grew upon certain oaks. This little parasitic plant found a place in the Druid ritual and so rendered the oak upon which it grew sacred. Later similar reverence was extended to all oaks of the

same species. All novices were necessarily instructed and initiated into the mysteries of Druidical worship in oak groves. This rendered the grove in which the ceremony had been once performed a sacred place.



Bur Lessons.

By A. C. HALL, Massachusetts.

There is very little pleasure, on coming in from an autumn walk to find one's clothing fringed with a collection of burdocks, cockle-burs, and other prickly seed vessels. We are prone to regard them as creations to tear the clothes and wear the temper of the unfortunate people who chance to come within reach of their tiny arms.

But with many things in the realm of nature we have to look beneath the exterior to find the real value and beauty, and these persistent autumn followers of ours may pay us for a little study.

At this season of the year there is no subject that invites our attention more decidedly than the study of seeds, and especially that division of the subject that has to do with the protection and distribution.

After the fruits and grains have been studied we may turn our attention to that which seems to be of no use, and gather in some of our neighbors from the byways and hedges and learn the story they have to tell.

The material is not hard to procure; the teacher may suffer from an embarrassment of riches in this direction, for she possesses a score of willing aids in her pupils.

First Lesson.

Subject.—Necessity of protection and distribution of seeds.

Material.—A collection of burs, prickly seed cases, rose hips, and sumac berries for class to examine.

Motive.—To lead children to discover the use of some of nature's ugly things, to see the necessity of protection and distribution, and to note provision for these needs.

Manner.—Teacher directs observation of material and tells simple story illustrative of the subject. Have pupils tell what they have observed in the distribution of other seeds, and how they have seen burs carried away.

Use of Information.—Subsequent language or reading lessons. To serve as centers around which succeeding lessons may be grouped.

Story.—Over by the fence grew a rose-bush, a sumac shrub, and some burdocks and cockle-burs. They were talking about their seeds as mothers often talk about their children, and wondering how they were going to send them out into the world to do their work. (The children may tell where each kept its seeds.)

The burs talked of their tiny sharp fingers and how easily they could catch hold of anything that came near and travel as far as they wished, and made the sumac and rose bushes feel a little discouraged.

Just then a flock of chattering sparrows flew from the fence rail right among our friends. The burs reached out their hands, but alas! they could not get even a little hold on the sparrows who danced and swung on the bushes and ate the pretty bright seeds, talking all the time about carrying all they could to some little friends who had not found such fine bushes. Pretty soon they flew away, each carrying a little seed case, and the burs dropped their heads as they saw that the rose and sumac had sent nearly all their seeds away. They wished they had not talked so much about how easy it was to get out into the world.

After a little, Ponto, the shaggy, black dog, came along driving old Boss. All the little burs held up their hands and stretched out their arms. "Please take us out into the world," they said.

So Ponto let them take hold of his shaggy fur, and old Boss took a number on her tail and away they went into the great world.

Questions.—After the story has been discussed by the

pupils, a few questions may be asked, as,—In what other ways have you seen burs carried?

How did the milkweed and dandelion send away their seeds?

Why do plants wish their seeds to be carried away?

Who can carry away the seeds of the sumac and rose besides the birds?

Why wouldn't the birds take away the burs as they did the berries?

Why did not Ponto and old Boss carry off the rose hips and sumac berries?

Why do you think Mother Nature put the rose and sumac seeds in such gay coverings?

The answers to these questions may serve as a reading lesson, or to copy and arrange for a language exercise.

Second Lesson.

After the general exercise with burs a few special studies may be taken: for instance, the second lesson on burdocks alone.

Material.—Enough burdocks on stems so that each child may have a cluster to examine.

Motive.—To discover the manner in which the bur grows on the stem, where the seed vessel is concealed, and how the seeds are distributed. Also show incidentally how little baskets, chairs, etc., can be made by sticking these burs together.

Manner.—The lesson should be conducted by asking questions of the children to lead them to discover facts.

Also recall to them how the burdock leaves grow and what sort of blossoms it has.

Are the blossoms prickly?

When do they begin to grow so?

Why do not the spines of the bur slip out as easily as they slip in?

Get the children to tell all the ways they know for the burdock to send its seeds away. Have them discover some use the burdock has, and show that because we can not always see the use of a thing at once, we must not conclude it is useless.

Application.—The children may be encouraged to make objects from their burdocks, and write or tell about what they have made.

Supplementary Lessons.

The third lesson on the cockle-bur may be conducted in a similar manner. The child's observation is the central point of the lesson and that is most valuable to him which he discovers himself.

Call attention to the sober colors of the burs and get pupils to see why they are not showily dressed. Compare the burdock with the cockle-bur, noting likenesses as well as differences.

The fourth lesson could be devoted to other burs that can be found, or seeds that have sharp spines that attach themselves and are carried from place to place. The fifth lesson should be devoted to reviews, comparisons, and simple generalizations. The teacher should not attempt to teach everything about the subject, but in these lessons show the children that there is something to interest and instruct in the very humblest weed that grows.

What the Burdock was Good For.

"Good for nothing," the farmer said,

As he made a sweep at the burdock's head;

But them, it was best, no doubt,

To come some day and root her out.

So he lowered his scythe, and went his way,

To see his corn, or gather his hay;

And the weed grew safe and strong and tall,

Close by the side of the garden wall.

"Good for home," said the little toad,

As he hopped up out of the dusty road.

He had just been having a dreadful fright,—

The boy who gave it was yet in sight.

Here it was cool, and dark, and green,

The safest kind of a leafy screen.
The toad was happy : "For," said he,
"The burdock was plainly meant for me."

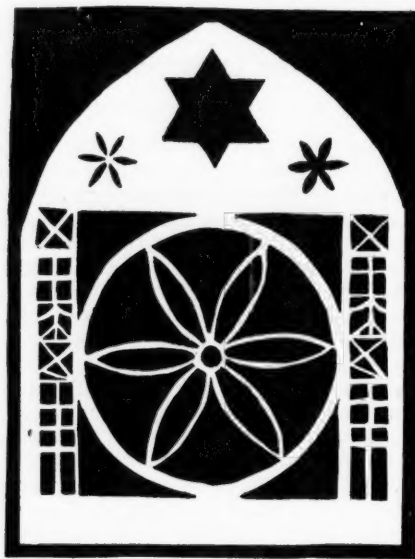
"Good for a prop," the spider thought,
And to and fro with care he wrought,
Till he fastened it well to an evergreen
And spun his cables fine between.
"Twas a beautiful bridge,—a triumph of skill,
The flies came 'round as idlers will ;
The spider lurked in his corner dim ;
The more that came the better for him.

"Good for play," said a child, perplex
To know what frolic was coming next ;
So she gathered the burs that all despised,
And her city playmates were quite surprised
To see what a beautiful basket or chair
Could be made, with a little time and care.
They ranged their treasures about with pride,
And played all day by the burdock's side.

Nothing is lost in this world of ours ;
Honey comes from the idle flowers ;
The weed that we pass in utter scorn,
May save a life by another morn ;
Wonders await us at every turn.
We must be silent and gladly learn.
No room for recklessness or abuse,
Since even the burdock has its use.

—Selected.

may be joined, forming lanterns, which may be hung in
the school-room windows for variety in decorations. —
In higher grades the various historic ornaments may

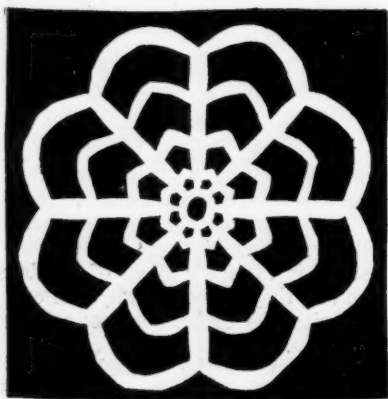


Constructive Work in Schools.

Stained Glass Effects for Window Decorations.

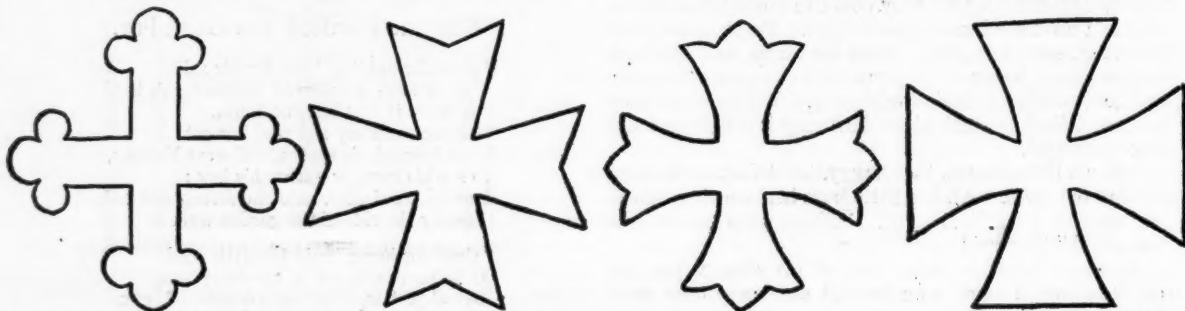
By MARGARET J. CODD, Illinois.

Before trying this work, one would really be surprised to see how much in the way of artistic effect can be secured by the use of such simple materials as cardboard and colored paper. And one of the best things about it is, that it may be used in all grades. The little ones may begin by cutting simple geometric forms from cardboard



and pasting over the openings any pretty colored paper. This will not only give eye training in the sense of form and outline, but also afford a most valuable opportunity for lessons in color.

Three pieces of card or strawboard, thus decorated,



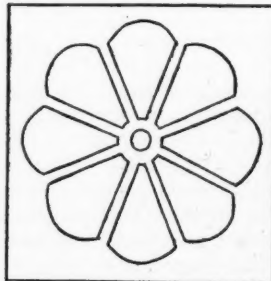
Various Crosses.

be studied and used. The early Egyptian and Greek motifs will furnish classic designs for borders, which may be applied to school windows and door transoms ; the centers being filled with lattice work, or other simple designs.

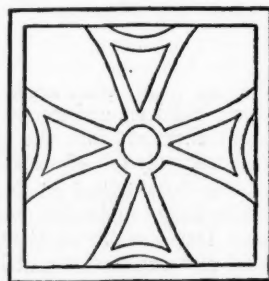
The different crosses of Christianity and heraldry are always appropriate ; so are the *fleur-de-lis* and all the varieties of trefoil, quatrefoil and rosette.

The Swastika, the oldest form of the cross, may also be used. This most mysterious emblem was prevalent among all ancient peoples. Speaking its eloquent message, before history was written, it was known all over the world ; and as it has ever been a sign of benediction and good augury, it is surely a fitting symbol for use in school.

For a recent exhibit the pupils of our room (fourth



Design for borders. No. 1.



Design for borders. No. 2.

year) decorated two large windows on the stair landing, with very good effect.

Of course, practice in cutting and arranging designs

was necessary, before the pupils could undertake such a large piece of work—and it may interest teachers to hear that the proverbially restless and troublesome boys were especially industrious and eager in cutting the designs.

In drawing the patterns, use double lines and be very careful that the entire design is connected, so that it will not fall to pieces when cut.

To give color, tissue paper of well selected tints was employed. Rich shades of blue, red, purple, and green were used, with lighter tints of orange, yellow, lavender, blue-green, olive-green, and pink. A little practice will soon teach the workers to avoid too glaring contrasts of color.

The borders and rosettes, arranged in school windows, are very decorative, and, used in hallways, may be made to give all the beautiful effects of the richest cathedral colorings.

Below are given suggestions for border designs and a color scheme for a window. Variations will readily suggest themselves, and one of the great values of this work is, that it affords the fullest scope for the exercise of ingenuity and taste on the part of both pupils and teachers.

The foundation of our large window was cut from a large sheet of the heaviest wrapping paper. Cut the paper half an inch larger than the window sash on each edge; this may be folded over and tacked lightly to the wooden frame to hold the work in place.

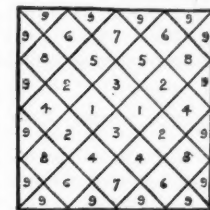
The openings in the lattice work were filled as follows:

- | | |
|---------------------|----------------|
| 1. orange. | 6. blue-green. |
| 2. old gold. | 7. light pink. |
| 3. light yellow. | 8. lavender. |
| 4. rich rose color. | 9. dark red. |
| 5. light-blue. | |

For a border for the lattice work, rosettes of green were used at the corners, on each side of which were crosses, filled in with rich purple, the remaining space being filled with quatrefoils of blue. The size and shape of the window, of course, must determine the details of the arrangement.

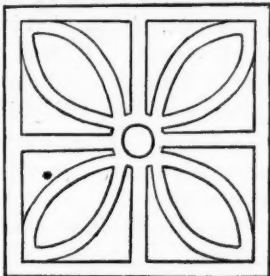
Tissue paper costs about ten cents per dozen sheets, the rich shades a little more. Library paste is best for

desirable. This may be managed in a square sash by cutting an arch shaped opening and leaving the corners filled in with the opaque wrapping paper. For this arched opening, the rose design given below may be used. It should be filled with rose tints, shading from a light pink center to deepest rose color. As there are eight scallops or divisions, the same design may be varied by arranging deep rose color in the form of a cross and filling the remaining divisions with light pink. Other designs may be added if space permits, and the effect will be very good if the work is neatly done.

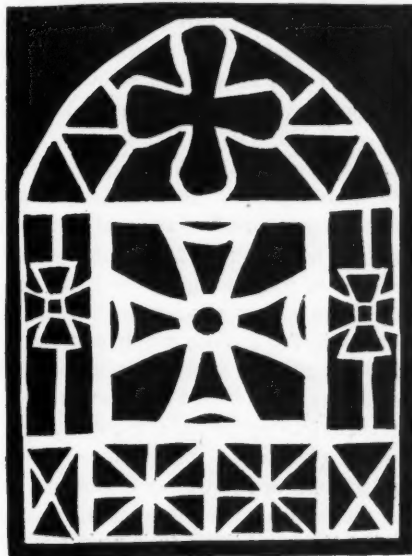


Color scheme for lattice work.

In another very effective arrangement the arch was

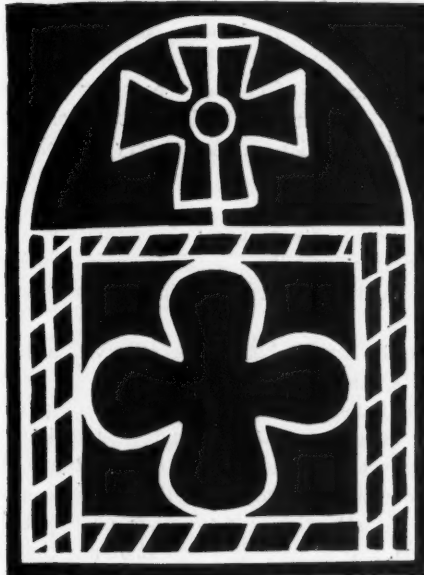
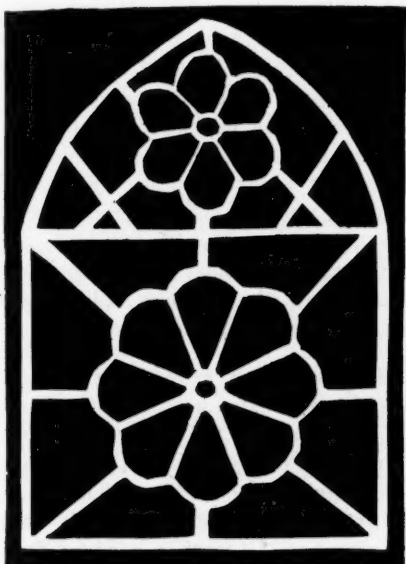


Design for borders. No. 3.



bordered with trefoils with the large rosette in the opening.

If the teacher does not care to undertake such elaborate work, the pupils may design miniature windows and rosettes. Common pasteboard or stiff paper may be used. These, filled in with colored paper, may be tastefully ar-



use, the common flour paste will answer. *Do not use mucilage nor glue.*

For the upper part of the window an arched effect is

ranged in the school windows with very artistic effect and the little touch of color will serve to brighten the plainest school-room.

The School Journal,

NEW YORK AND CHICAGO.

WEEK ENDING AUGUST 19, 1899.

Roosevelt and Carnegie.

In the address to the graduating class of Cornell university Gov. Roosevelt gave his definition of "character" as being a multitude of qualities grouped together, such as courage, truthfulness, sobriety, resolution, perseverance, honest disinterestedness in dealing with others and with the state, and a firm belief in the ideals of one's own country. He felt called upon to give a rap at Mr. Andrew Carnegie in these words: "There has been a good deal of discussion recently, due to the statements of certain gentlemen who have amassed large fortunes, to the effect that they do not believe in a college education. This country could better afford to lose every man in it who has amassed a large fortune than to lose one-half of its college-bred men. We can get on without the men of immense fortunes. Sometimes we can do very well indeed without them, but we could not do the best work possible to be done save for the men who took the chances offered to train themselves so that they can do the fine and delicate work which must be done if we are to raise our civilization above a purely material basis."

We hardly think this is a fair presentation of the case. Mr. Carnegie asked, "Is it best for the man who aims at business (meaning to accumulate money) to go to college?" His reply was in the negative. He did not argue against colleges and college education. He took the ground that men are needed to manage business, and held that what they needed was training in business. The governor thinks that men are needed to do "fine and delicate work," and believes the college is the place to train these. Why cannot both of these men be right?

Timely Questions in Education.

Among the questions to be discussed at the international congress of elementary education to be held in connection with the Paris exposition in 1900, are the following:

1. The teaching of domestic economy (cooking, etc.)
2. Means of securing attendance at school.
3. Moral education in elementary schools (without touching religious questions) and the means of developing such education.
4. Institutions for securing the association of former pupils, courses for adults, public lectures, social clubs of graduates and other former pupils, aid societies, reading rooms, etc.
5. The teaching in higher elementary schools—its object, limits, adaptation to local interests. Under this head are to be discussed the relations of elementary education in these schools with the secondary education on one hand, and with the trade schools on the other. This important question of grading the different schools will also occupy the attention of two other congresses of the exposition, that of secondary education and that of technical education, commercial and industrial.

Questions 3 and 4 state the great problems of the present in the field of elementary education. A thoughtful discussion ought to bring out many valuable plans. Why

does not the N. E. A. take a vote by mail to elect five delegates to this congress? This matter is well worth considering.

Degrees for Value Received.

The "Chancellor" of the "National University of Chicago," is again offering degrees for sale, to those who like that sort of thing. This time special inducements are made to musicians and others in Europe to obtain degrees at the special bargain rate of \$100. The "Chancellor" says in his circular that "This university has proved a boon to non-resident scholars in the past, but this may not last long, as a law is soon to be passed requiring a year's work in this university of all graduates, thus barring out those who cannot attend a year in Chicago." This diploma traffic has drawn from the *University Correspondent* the story of a chimney sweep who prosecuted a resident in the suburbs of Edinburgh for debt. The presiding justice called for the sweep to give evidence as to the debt. "And what is your name?" "Jamie Gregory, LL.D., sir." "What, doctor of laws, and where on earth did you get that distinction?" "'Twas a fellow fra an American university, an' I swepit his chimney three times. 'I canna pay you cash, Jamie Gregory,' he says, 'but I'll make ye an LL.D., an' we'll ca' it quets.' An' he did."

There are others who have paid personal debts with degrees.

President Hadley, of Yale, declares that one of the main purposes of education is to produce a public sentiment that we can trust to carry on the government. He feels that one great danger is that men prefer party to nation and the interest of their district to that of their country. It is well worth inquiring whether the discussions of the N. E. A. might not rise to the dignity of the addresses delivered at the great colleges. Again is it possible for the teachers to fraternize as the graduates of colleges do?

Attention has been called from time to time to features in our civilization that are disheartening. Among these are homicides and suicides. It appears that in forty-seven of the larger cities 2,331 suicides were officially reported during 1898, a ratio for the country of 1 to 5,000, probably. Yet these were all educated persons.

We think this condition of things is one that educators must take into consideration; it is a problem that belongs more to them than to any one else. What is there in our civilization or what left out that prompts to suicide? At all events, what can the teacher do to cause the human beings that come under his care to determine to combat pluckily with the obstacles of life rather than to cowardly run away from them?

It was thought to be a great thing when Stephen Girard gave his accumulated wealth for the education of orphans; but that was only the first drops of the shower. During the past year over \$15,000,000 have been given to educational institutions and libraries. This shows that a general perception exists that the nation's welfare depends upon education. It must be admitted that we are but partially educated. When a majority of the people in the great cities support the kind of newspapers that put many claims of our civilization to shame they cannot be ranked high on an educational scale.

The Busy World.

The Dreyfus Court Martial.

An important stage was reached in the Dreyfus case when Gen. Mercier, the head and front of the anti-Dreyfus party, and ex-President Casimir-Perier appeared as witnesses. Mercier is ex-minister of war, and it was under his regime that Dreyfus was condemned. He is a rabid anti-Semite, and still professes to believe that Dreyfus is guilty. Casimir-Perier admits that he was deceived then, but now has the courage to declare Dreyfus innocent. The friends of Mercier claimed that he had revelations to make that would surely prove Dreyfus guilty. Instead of that he merely recited the familiar story of how the general staff was convinced of Dreyfus' guilt; so weak was the impression he made that he was hissed as he left the stand.

The friends of Dreyfus now claim that it has been shown that the *bordereau* or letter, to the German military attaché at Paris, reciting a documentary list of French military secrets which the writer enclosed, was written, not by Dreyfus, but by Esterhazy; that the secret dossier, or collection of documents relating to the case, contained many that were forged by Lt.-Col. Henry who was the real traitor, assisted by Esterhazy, who sold the secrets. There has nothing, they claim, been found against Capt. Dreyfus.

It is feared that behind the anti-Dreyfus agitation is a big plot against the republic, and that it is likely to come to a head now. Paul Deroulede and other members of the Patriotic League have been arrested.

The shooting of M. Labori, the counsel of Dreyfus, on August 14, while on his way to attend the trial, caused the intensest excitement thruout France. It is not known yet what will be the effect of the assassin's bullet; the doctors have hopes of saving his life. The Dreyfusites say that Labori's attempted murder was planned by army sympathizers; the Anti-revisionists feared that his pitiless examination of Mercier would bring the truth to light.

Nigeria Under British Government Control.

The British government has made an important change in the affairs of West Africa by purchasing all the administrative rights and powers of the Royal Niger Company. This is an organization very similar to the famous companies that played such an important part two hundred and fifty years ago in the development of the eastern coast of North America.

In 1877, when the idea of making Nigeria British was first conceived, there was no foreigner, whether soldier, missionary, or traveler, in the whole basin of the Niger, and Lake Chad between the French colony of Senegal on the extreme west and the valley of the Nile on the extreme east, or between the seaboard factories on the gulf of Guinea to the south, and the Algerian and Tunisian frontiers on the north. The Niger Company was formed in the early eighties to develop this immense district. It was a private enterprise and began to pay six per cent. dividends almost immediately. In 1886, it was granted a royal charter, which empowered it to conclude treaties with native chiefs and levy customs duties to cover the expenses of government. From that time to this the company has carried on the dual duties of trade and administration. It extended its domain from a few trading stations until its sway embraced over half a million square miles of territory, containing a population of 30,000,000. It overcame the warlike native tribes, stamped out slavery, prohibited the sale of liquor, and forestalled the attempt of the French and Germans to seize the Niger for themselves.

For this work credit is due particularly to Sir George Goldie, the head of the company, and he will probably be the first governor of the new protectorate. The government took charge of the administration of the province, because it did not think it proper that a private

corporation should be concerned in the settlement of questions such as might lead to war. Nigeria will now be under the control of the British colonial office, all inland frontiers will be abolished, and a common arms law and a common tariff enforced.

Great Britain and the Boers.

The dispute between the British government and the Boers, which early in the summer bade fair to be amicably settled, has lately assumed a more acute form than ever. The warlike attitude of the British government is attributed to Mr. Chamberlain, and he bases the justice of a war with the Boers upon the grievances of the English-speaking residents of Johannesburg, as embodied in a petition to the queen, signed by 21,000 foreign male residents of the great mining city of South Africa. They are taxed heavily and have no voice in the government. There is no doubt much justice in their complaint.

On the other hand, President Kruger claims that Great Britain wishes to possess herself of the Transvaal, with its rich gold and diamond mines; that the government is being urged on by the greed of the stockholders of the South African syndicates. He asks that before making war, England shall appoint a commission to inquire into the source of the 21,000 signatures to the petition, and how far the representatives of the British government are unofficially identified with the continued agitation. He asserts that practically the whole South African press is controlled by the German-Rhodesian financial houses.

There is undoubtedly much truth in his contentions, but he is a brave man contending against fate. The rising tide of English-speaking peoples is destined soon to overflow the Boer republic. Mr. Chamberlain says the situation is so strained that it must be settled now either by peaceful measures or war.

The Philippine Insurrection Must be Suppressed.

Elihu Root, the new secretary of war, has said he is in favor of giving Gen. Otis all the men he requires for the suppression of the insurrection in the Philippines. Transports with troops aboard will leave at frequent intervals from now until the end of October (the close of the rainy season), when the army in the Philippines is expected to number about 50,000.

As to the cry against Gen. Otis in the newspapers, it is evident that both the president and secretary are disposed to view it with some suspicion. Gen. Otis mortally offended the newspaper correspondents by instituting a strict censorship; besides, newspapers that habitually exaggerate and misrepresent other matters could not be expected to deal truthfully with the Philippine campaign.

On August 9, Gen. MacArthur's forces advanced five miles beyond San Fernando, north of Manila, and defeated a Filipino force of 6,000. The country passed over is covered with rice fields and bamboo thickets, the hardest possible ground for marching. The mud in places was knee deep.

A detachment of troops from Gen. Young's brigade on August 13, drove a body of several hundred insurgents from San Mateo, northeast of the San Juan reservoir, about ten miles from Manila.

Spread of the English Language.

If it is true that trade follows the flag it is true that language follows it also. In the schools now opening in the Philippines the pupils are required to study English; in the schools of Porto Rico and Cuba, English is pursued; the number of pupils in our language in the government schools in Egypt is largely increasing; most of the newspapers in the Transvaal are to-day printed in English, in spite of the efforts of the Boers to maintain Dutch as the language of the country; the increased study of English in Oriental countries of late years has been a subject of remark.

In 1888, Mr. Gladstone pointed out that a century ago only 15,000,000 people spoke English; at the time he

wrote he estimated that it was spoken by 105,000,000; now the number speaking it is believed to be over 120,000,000, and it is estimated that this number will increase sevenfold in the next hundred years.

The numbers speaking the chief languages at present are as follows: Chinese, 400,000,000; English, 120,000,000; Russian, 100,000,000; Hindu, 90,000,000; German, 60,000,000; Spanish, 48,000,000; French, 46,000,000.

The reason why English is distancing other languages is that English-speaking peoples have more extended business, educational, and social relations with the rest of the world, than other peoples, and they have more room in which to spread. Scores of millions of this increase will some day inhabit vast regions of North America, South Africa, and Australia.

A Great Change for Japan.

A momentous change took place in Japan on July 17, by which that government was placed on a par with the chief powers of the world. On November 22, 1894, W. Q. Gresham, then secretary of state, signed a treaty with Japan which revolutionized the conventional relations between Japan and the United States. It provided that all existing treaties should cease on July 17, 1899; and in place of these, agreements were made which abolished the United States courts in Japan and turned the cases over to the Japanese courts; that restored to Japan the control of her tariff, which had been restricted by the convention of 1866, under which terms Japan could not levy a duty greater than five per cent. *ad valorem*; and that gave her again the right to exercise national sovereignty, which was temporarily suspended when she made her first treaties. Similar treaties were also made between Japan and France, Germany, Great Britain, and Austria, so that now she stands forth as a fully recognized and independent power.

This is the triumphant climax of everything that Japan has achieved since it first emerged from the seclusion in which it was wrapped for centuries. She prepared herself for it by the reformation of the laws, the elevation of the judiciary, the introduction of liberal and enlightened methods of public administration, and other reforms. Patriotic Japanese now look forward to the future with high hope, but not without a sense of the responsibility of their new relations.

Telephoning Around the World.—Thos. A. Edison says that it is possible to telephone around the world. He would lay a cable from New York to Southampton, from there to Berlin, Vienna, Constantinople, Calcutta, Peking, Bering strait, Alaska, San Francisco. The only thing wanting for the project is a hundred millions of money.

Tea Saloons.—The public tea saloons are growing in favor. They have existed in London for many years.



Courtesy of Review of Reviews.

Porto Rican Public School under the old Regime.

The New York saloons in Cherry and Grand streets are well patronized, being regarded as places of social enjoyment to which men come with their families. One point made by women is that they can have an opportunity of seeing and conversing with their acquaintances without the disturbance a visit creates in the usual tenement rooms.

Carnegie's Latest Gift.—Andrew Carnegie is likely to fulfil his idea that a rich man should give away his money while he is alive, having given \$1,750,000 to the Library and Art museum founded by him in Pittsburg, for additional buildings.

Letters.

The School as a Center.

I shall always thank THE JOURNAL for presenting the proposition that the school is to be considered as a center of enlightenment and civilization in the community. This was cogently stated in 1883, if I remember aright; (I have been a reader of it since 1880); the idea struck me with much force at the time. On looking around I saw some teachers occupied a much higher place than others—they had a community influence as well as a school influence.

One instance particularly struck me. The teacher led the village choir, aided in the Sunday-school had started a library association which had accumulated nearly a thousand books at that time, was a promoter of a course of lectures, and of a Browning Club. He was felt to be a social force in that community; the entire village felt his influence. I am reminded of the proposition promulgated by THE JOURNAL by one of the resolutions of the N. E. A., at Los Angeles, which says the school is to be regarded as a community center "to draw to itself the children and the parents."

Brooklyn.

FINDLAY HARRISON.

Children's Sayings.

(Small girl examining her pen.)

To teacher.—"My pen broke—it was cracked when I bought it."

(Teacher).—"Give me a little story with the word *each* in it."

(Enthusiastic boy).—*I each.*

(Little girl to teacher).—"Miss —, I was foot all day yesterday, must I go head to-day?"

(Teacher).—"Lee, when is your birthday?"

(Lee).—In July.

(Teacher).—What day?

(Lee).—The hottest day.

Examination question.—Abbreviate *Mister* and *Mistress*.

(Harold, to teacher).—Must we prove it?

After listening to an anthem by a choir a little girl remarked: "Mr. Blank's voice does not match with the others."

Teacher.—"What will you be when you are a man, Ensor?"

Ensor (four years old).—"Carpenter."

Teacher.—"What will you make then?"

Ensor.—"Carpets."

Teacher had (she thought) carefully explained the function of the pronoun to her grammar class. When she asked for examples of pronouns she was surprised to receive the word mutton. "Mutton a pronoun, why?" "The word is used instead of 'Sheep.'"

Teaching the Golden Text. "Bear ye one another's burdens," a lady asked a small boy; "Do you know what are burdens, Fred?"

"Yes, ma'am"—his face brightening—"they are little birds."

Ontario.

JESSIE WILSON.

National Educational Association.

Abstracts of Papers and Addresses.

1. General Association.

Evolution and Ethics.

By PROF. SYDNEY T. SKIDMORE, Philadelphia Normal School.

Practical ethics is largely concerned with the "problem of evil" and the elimination of evil from the world. Whether the procedure against it be properly militant or educative depends on the nature of evil itself. If evil be a principle antagonistic to good, its operations should be resisted in a militant way and its operators forced under arrest and punishment. If evil be but the contrast of material realities with ideals of perfection, or if it be the contrast of inferior character or condition with superior, then its proper treatment calls for developmental stimuli to carry the being from lower to higher condition.

The principal points made are the following:

1. We rise in the scale of being on stepping stones within ourselves and not by climbing over others.

2. Evil has no positive reality. The present is the early dawn of the human day. The full human type is largely undeveloped and its imperfections are phases of rudimentary conditions.

3. The genus is emerging from animalism from which it is distinct by reason of its intellectual supremacy over material conditions, and the degree of its emergence is measured by the development of this supremacy.

4. This development is promoted by all that promotes selfhood, as self-illumination, self-respect, self-responsibility, self-control, and self-directiveness, and it is hindered by applying to humanism that which fitly applies only to animalism, as the despotic assertiveness of external mastery, humiliation, pain, penalty, fear, and favor.

5. The teaching profession is the trustee of this evolution and should be the high expert commission of the world for framing its moral codes. It should be guided by what it finds in the ever-present problem and be in no degree subject to prejudices, traditions, dogmas, or deceitful interpretations that ignorance has given to human nature.

In this sphere its peculiar mission is to set forth the latest, best, and most saving gifts of intelligence to the world.

Abstract of address before N. E. A., July 13.

Function of the Educational Press.

By GEO. P. BROWN, Editor of *School and Home Education*.

The student of educational problems soon discovers that the number who are consciously hungering and thirsting after distinctively educational reading of any kind is not "so wide as a barn door nor so deep as a well." He may find incidentally, while seeking to follow Horace Greeley's advice, that there is a growing and already encouragingly large class of the educational people who are pursuing the study of education in the spirit of scientific investigation. They are hospitable to new ideas and rejoice when a new truth crowds out an old error from their practice. It is this class of teachers and students that is the hope of the country.

The common school is proclaimed as the hope of the country, but this hope is to be realized only when the spirit of these few has become the spirit of all, and the goal of a more abundant life has been substituted for that which the general public calls schooling. An intelligent representative of this public in my own state declares that schooling is one thing and education is another and different thing, and he proposes to mend matters by six months' schooling each year, and six months' education, in learning the theory and art of living by pursuing some useful vocation. The school is regarded by him as the place for mastering the symbols and scholastic forms of civilized life. His ideal schoolmaster is he who

discovers some short cut, or "Improved method" of mastering those forms. His motto, if he should formulate one, would be, first form the mind in the school, and then furnish it outside. His ideal school journal would resemble a journal of mechanics. It would describe any devices and processes; educational machines for fixing forms in the memory.

The educational press must be the standard bearer rather than the camp follower of the educational host if it shall perform its function. It must gather and circulate the material by which public opinion shall be molded, and serve as the herald, at least, of the leaders of the educational array. It seeks to publish the observations, experiences, and tentative conclusions of men and women who write with varying degrees of consciousness of the transition in educational philosophy and practice that we are now entering upon. The less conscious one is of the philosophy of the movement, the more valuable, sometimes, is his contribution, provided he is sensitive to the new atmosphere. Those who are not influenced by it may be good priests and scribes for recording what is done under the law, but they are not prophets of the coming time.

Of course the educational press must see and state the problems and be quick to discover the trend of general educational thought from the multiplicity and variety of the thoughts of individuals. Hence the need, greater than any other, that a larger number of those recognized as leaders in the readjustment of education to changing conditions shall connect themselves with it by making free use of its columns to record their observations and reflections. They must do this in an altruistic spirit and without expectation of pecuniary reward. The educational public must join hands with the educational editor in helping him in his missionary work of diffusing knowledge among the people. The man or woman who is not willing to do this for the cause until, at least, the general public has awakened to the consciousness that they have souls as well as pockets, cannot write anything as a rule that will be of much service to the cause. It is the spirit in which things are uttered, together with that which they contain, that makes their publication of value.

The time may not be so far distant as we think when what the teacher wishes to read and ought to read will be the things which the general public will wish to read. There is little in education that is not of vital interest to the home. When the school shall fill its full function for the children, and they have become active citizens, they will be both able and willing to read what now they cannot read for the reason that their schooling has done so little to assist in their education.

The reason why so few are really interested in the study of education, or of religion, or of art, or of politics, is that their powers have not been trained to think these subjects. They learn to think business by the persistent study and practice of it. There is no other way for them to become interested in what makes for the higher life of the soul.

It is the doctrine of this paper that the educational press must seek to diffuse the kind of ideas among the educational public that will tend to the creating of a rational theory and practice of educating children in the schools and the homes. It must seek to unite the school and the home in this study. It must recognize the ideas and forces at work in the world for the higher evolution of the race and direct attention to them. It must seek to improve the thinking of teachers and parents as persistently as it seeks to improve their practices. Education is an art that can never be mastered, unless the principles of the art and its purpose are well understood.

The educational press ought to learn, from the history of the past, that all education must have behavior, conduct, deeds, as the direct aim of its endeavor. The

speaker has been declaring for some years that these things should be the aim of the endeavors of this National Educational Association as a body, and that it ought to set itself persistently to work to make its ideals prevail among the people. Contemplation and erudition are good things. Deeds are the best things.

Part of paper read before the N. E. A., July 14.



2. Department Meetings.

Art Instruction in the University.

By PROF. HENRY T. ARDLEY, University of California.

Courses in art should be given in every university as part of a liberal education as well as for the sake of its practical relation to other university subjects. Its great educational value is appreciated in our leading universities, but meets with a hard struggle for its just rights in our secondary and smaller ones, where its short-sighted and narrow-minded opponents jealously guard the fossilized traditions of inanimate education.

The study of art in the university should be both historical and technical, embracing a thoro training in the chief characteristics of the great art periods, such as the Egyptian, Assyrian, Greek, Roman, Byzantine, Romanesque, Moresque, Gothic, and Renaissance in relation to purpose, place, and material, and technical skill in presenting facts of form and power to conventionalize and adopt them to historic styles of art for all purposes. The foundation work in drawing should be strong in outline and correct in detail, tending more to its application in the industrial arts and their history than to pictorial effect, impressionism or fads of technique, and all art departments in universities should consider their relation to other departments and be prepared to give the exact, careful detail drawing needed by students in botany, biology, engineering, etc., where the study of pictorial composition and effect are almost superfluous.

Work for "pictorial effect" only should be left to art studios who are already turning out enough "picture painters;" but this nation needs more educated artist-artisans to place it upon a high plane of prosperity and enable it to compete with the rest of the world in lifting our raw material to its highest market value, instead of spending millions abroad annually for art goods that should be made at home.

Art work of the secondary schools in preparation for university work should embrace the study of light and shade and linear perspective from the object, giving a thoro foundation in elementary work rather than a vague striving after less serious work for pictorial effect and show.

Abstract of paper before Art Department, N. E. A., July 13.

Problems in Artistic Rendering.

By KATHERINE M. BALL, San Francisco.

Artistic rendering that applies to such elementary drawing as is taught in our public schools can be reduced to rule and principle, so that by presumptive methods it can be taught successfully to classes of children of all degrees of ability.

No one will claim that any kind of training can produce a genius, nor that any great works of art can emanate from such a limited study of the subject as the time of the public school affords, but we do know that the right kind of training will call forth the natural tendencies of pupils, and develop inherent ability that may exist.

An appreciation of good style in art is as dependent upon educational standards as is an appreciation of good style in literature, and when pupils are taught to discriminate between the desirable and objectionable in kinds of drawing, their understanding will manifest itself in their general expressions.

Unlike seeing, rendering can never be developed from

the study of the object; because pictorial representation is an illusion, a sort of subjective creation, which aims to produce an effect on the eye similar to that produced by the object itself, and yet entirely unlike the object in its real structure.

The rendering is the art of pictorial representation which has to be learned, and imitation must form an important part of this instruction.

Not only the teacher, consciously or unconsciously, impresses his style on his pupils, but every art form that the student observes influences his expression in some degree.

Imitation may act as a suggestion, stimulating thought and action along new lines and developing observation; or it may be so used as to limit and confine the student to a fixed process that admits of no modification, thereby being either an advantage or a detriment to the student. Its principal motive for being is to help the student to do things correctly and quickly, so that valuable time may not be consumed in useless experiment.

Children's standards of excellence are regulated by what they have seen, or what they have heard. An art atmosphere and environment shows itself very quickly in any form of expression, whether it be in the furnishing of a room, the gowning of a woman, or the rendering of a drawing; and it is but natural that in localities where education has been largely scientific, mechanical accuracy and positive definition take precedence over poetic suggestions, not only in standards of excellence but in forms of expression.

Where the thin, sharp, or ruled line, and the over-finished, highly-wrought, and artistic drawing prevails, it is a positive indication of the lack of training of the imaginative and poetic sense, for freedom of movement, softness of line, facility of execution and simplicity of rendering are the spontaneous expressions of artistic feeling.

If we would train our children to do acceptable work, we must teach drawing as we teach other subjects. We must build conscientiously, laying stone upon stone, with the greatest of care. It must be precept and example, until habit is established and action becomes automatic, beginning early, and continuing thru the entire school life; for as David Haremsaid, "Ev'ry hoss c'n do a thing better 'n' spryer if he's been broke to it as a colt."

Abstract of paper before Art Department, N. E. A., July 12.

Synopsis of Discussion.

By ESTHER M. WILSON, Director of Art Department, State Normal School, Chico, Cal.

Spontaneity of expression should be encouraged, but it needs a guiding hand.

Time is an important element, and life is too short to waste it by laboriously plodding thru unessentials while striving to get at the true principles of art.

Drawing is a language, primeval and simple—the natural method of thought expression, and in no way should we cripple or hinder this inborn desire to do, but give it all possible encouragement.

But the art impulse is not always a living impulse. Geniuses are rare. It is more frequently a latent force that needs to be discovered. However much it may lack in assertive power, it still exists, a part of every organization, but apparently waiting for some strong hand to quicken into life, and to point out the possibilities that rest within. It needs to be drawn out, cultivated, and developed.

Withhold the sunshine of human encouragement, and it perishes; nurture it, and we cannot tell to what extent its highest development may be realized.

As in the varied avenues of life every effort is made to arouse the noblest impulses and broaden the mental horizon, so in the field of art should those of larger experience scatter thoughts suggestive to awaken those lofty sentiments that refine, ennoble, and spiritualize.

A Man: As He is Drawn by Children.

By MRS. LOUISE MAITLAND, State Normal School, San Jose, Cal.

Studies of the spontaneous drawings of children having proved that human figures exceed in interest all other objects with young children, a new study has been undertaken on the way they draw a man. Four thousand five hundred and twenty-four drawings were collected, the artists ranging from six to seventeen years.

The children's drawing of a man, clothed and in action, is a slow and logical process, well repaying study; but the proportions and gradual evolution from full face to profile are perhaps the most important factors on account of their significant pedagogical implications.

While it is impossible to say that there is organic relation between the size of the child's own body and the figures he draws, we find that law of some sort underlies his unconscious sense of proportion. The height of the man and the length of the arms approximate more and more closely to a norm as the child gets older. Beginning with six years, the larger number of men are three heads high; slowly this gives place to four heads; by ten to fourteen years, five heads is the average height; and from fourteen to seventeen years, figures six heads high predominate, tending towards seven heads at the oldest age. While there are always some abnormally short or tall men drawn, the above proportions are generally true and hold good of arm-length as well, in its own degree.

The most interesting result of this study lies in the fact that it has been possible to illustrate by type pictures changing and growing conditions in the children's minds with regard to the outward appearance of the human figure. We can see how they gradually try to get the figure turned round from full face to profile. The feet turn first, followed by legs, arms, and head with its features. The last thing to be perfected is the eye; this long remains incorrect, viz.: a full-face circular eye placed at too great a distance from the nose. When the foreshortened ellipse appears, the arms, trunk, legs, and feet are all well-defined and in their right positions and at last a triumphant man emerges.

We find then that there are stages in the evolution of the pictorial man, that these stages lead very closely, naturally and after a logic of the children's own, to a well-drawn, well-proportioned and active human figure. Is it too much to assert that, guided by the logic of the children, or at least understanding it and acknowledging it, we shall best be able to define, simplify, and hasten these stages, thus turning into progressive steps what is now vague and ill-defined in the child's own mind, and either unknown or scorned by the majority of drawing teachers? Our efforts in the San Jose normal this year, seconded by the teachers of the teachers of the training department, crude and tentative as they necessarily are, lead us to venture on an affirmative reply.

Abstract of paper before Child Study Department, N. E. A., July 13.

Content and Extent of Music in Public Schools.

By HERBERT GRIGGS, Denver, Colo.

If pupils on leaving the eighth grade or the high school have ability to sing intelligently music of ordinary difficulty at first sight, well enough to sing their part with good quality of tone in choir or chorus; if they have learned, thru the practice of musical exercises, to concentrate their thought, strengthen their mental power, quicken their perception, to appreciate the good and beautiful in music, so that they would rather associate with those who live better and purer lives than those companions to be found in the streets:—then I think that the object of music in the public schools is attained.

Music when properly taught should accomplish the following results:

1st.—Mentally, a quickening of the perceptive faculties thru exercise in rapid discovery, recognition, and concentration.

2nd.—Physically, thru exercise in breathing, tone production, correct position of the body, and of the saturation of the body and mind with sonorous fluid.

3rd.—Disciplinary, thru doing the same thing, in the same way, at the same time, and the effect of sustained tone and harmony on the mind, thus dissipating the spirit of contradiction.

4th.—Morally, by creating a love for the good and beautiful in music, thereby causing pupils, especially of older years, a desire to associate with company of refined and elevated tastes; also to impress on the mind lessons of honesty, courage, cleanliness, truthfulness, patriotism, and respect for parents and elders by the repetition of good words set to good music.

The analytical and critical should be carried only so far as it promotes appreciation and sympathy; when the two lines begin to diverge it is time to stop.

There is a certain mental work that must be done to enable the pupil to appreciate the beauty of anything; a child must learn to read words and sentences to appreciate a poem; a child must learn to read music readily to take in the beauty of a composition; but when the head goes ahead of the heart we have as a product a set of pedantic critics; and when the heart gets beyond the head we have a lot of watery-minded sentimentalists. In the lower grades of the schools the technical and mental must be largely taught, but not to the entire exclusion of the emotional. But in the eighth year and high school the two should be joined.

Abstract of paper before Music Department, N. E. A., July 12.

How May Fatigue be Reduced?

By H. E. KRATZ, Supt. of Schools, Sioux City, Ia.

Psychologists tell us that with the normal pupil mental fatigue from school work is quickly induced and also quickly passes away. Mental efficiency, or the increments of skill gained thru mental training, is much more permanent in its character and is not soon lost. If this be true in order to attain the highest possible maximum of mental efficiency, with the greatest economy of effort, provide the working periods of the school-room with more frequent rest periods, and thus secure, thru this power of the mind to recuperate rapidly, an almost continuous high state of mental vigor. The mind, instead of being as we supposed, like the old-fashioned sensitized plate of the photographer, which required a long exposure, is after all more like the highly sensitized plate of the modern snapshot camera.

Change is rest. Weariness in the sense of sight can be partially relieved by exercises which appeal largely to the ear or to use of the hand. The strongest possible contrasts should be made in the arrangement of the daily program and the wisest adaptation of difficult subjects to the best working hours of the day.

Much wasted energy can also be husbanded by a wiser training of pupils how to study. Studying is a great art, and its mastery, or failure to master it, is fraught with momentous consequences to the pupil. There are those right beginnings which lead on to conscious power and mastery, and there are those misguided efforts which lead to weariness and defeat.

The utilization of interest in a greater degree than heretofore promises much relief from the past weariness and drudgery of the school-room. Wherein interest becomes such a potent factor in relieving from drudgery lies in the fact that, even concerning subjects which were at first distasteful, we may, to quote the Herbartians, "build up such a powerful apperception mass that any fact connected with that mass will at once attract our attention quite irrespective of our will." Thus may every subject in the school curriculum be eventually included within the charmed circle of the pupil's interest.

Dislikes, antagonisms, adverse undercurrents of feeling sap energies which should be utilized in fruitful school work. Education from this point of view is to direct nervous energy into right channels and to keep it out of

wrong ones. Some of these nerve currents may be termed friendly and some hostile. Some dominant and some defeated. Fatigue and worry may so react upon each other that they become an endless circle.

Every idea that enters a boy's mind is accompanied by some tendencies to motor activity.

In fact, he has not thoroly comprehended it until it has set every power he possesses, both of mind and body, into sympathetic action. He must be free to learn it all over, to secure for himself as many points of contact as possible.

Play on the school ground under supervision, with its freedom and self-control, its spontaneity and self-restraint, its exhilaration and self-expression, is not only the best tonic for rapid recovery from mental fatigue, but also possesses great value as an educational process. Physical training exercises while helpful; yet demand close attention and do not afford as good opportunities for mental recuperation as the more spontaneous movements in an outdoor recess. Both are needed.

Abstract of address before the Department of Physical Education, N. E. A., July 14.

Progress in Science Teaching.

By CHAS. NEWELL COBB, Albany, N. Y.

Progress in science during the past thirty years has largely increased the field and the material available for science study and teaching in both elementary and secondary schools as well as in higher institutions.

Increased interest in the science of teaching has led directly to increased attention to the method of teaching science so that it can no longer truthfully be said that the scientific method is applied to teaching every branch except science.

Added material and better teaching have tended to lengthen existing science courses and have led to the establishment of such courses where formerly there were none.

The material equipment for successful science teaching has been so largely augmented within the last thirty years that it might almost be said to have been created within that period. Well equipped physical, chemical, and biologic laboratories are no longer uncommon in the high schools of villages and smaller cities, while nearly all higher institutions have recognized the necessity for such equipment and have supplied it, and many furnish excellent facilities for teaching earth science also.

The number of persons engaged in teaching science exclusively has been multiplied many fold and with this increase in numbers has come noteworthy increased average ability to instruct.

A pleasing thought is that public opinion has demanded and approved the change.

Abstract of address before Science Department, N. E. A., July 13.

Reviews in the High Schools.

By J. W. CRABTREE, Inspector Nebraska High Schools.

Pupils entering the high school at the age of fourteen and under, if they have been well taught, are ready to take up elementary high school subjects, but their immaturity prevents their having a thoro knowledge of arithmetic, grammar, history, and geography. At that age they do well to have a working knowledge of the grammar grade branches; that is, such a knowledge as will enable them to begin algebra, Latin, and English. A better grasp of these subjects must come later. It must come after the pupils have advanced not only in years, but in their studies. Their knowledge of the common branches will be broadened and extended somewhat in connection with certain high school subjects, but aside from these there should be a short intense study of the essential common school subjects, especially in arithmetic and grammar, in the latter part of the twelfth year.

There is a knowledge of these branches that no imma-

ture mind can grasp. Nothing would be gained by reviewing these subjects in the first and second years of the high school. It would merely be repetition of the work of the grammar grades without much, if any, improvement therein. A half year of good, thoro work on these branches in the twelfth year is worth two years on the same at the beginning of the high school. Whether the question is viewed from the university or high school standpoint, the answer must be the same. Whether the student is to continue in school or step out, no school work is more valuable to him than a knowledge of these common school branches.

It does not matter whether the review is bunched at the last end of the course or extended thru the year, occupying one hour a day. It is important to give the review. No work in the high school is of more practical value or of more culture value. The work in arithmetic should consist of a rapid review of the essential divisions of the subject, together with an analysis of practical problems, and a discussion of the principles involved in the various operations of arithmetic.

The work in history should not be so much in the nature of a review as a further study of the problems of history by a careful study of the sources. The study of geography might be extended by a term or more in physical geography. The grammar review, should consist of careful technical review, closing with a terrific drill in faulty English.

Summary of paper before Secondary Department, N. E. A., July 12.

Science in the High School.

By G. M. RICHARDSON, Leland Stanford Jr. University.

Science has won its place in the high school curriculum against much opposition, and under unfavorable conditions. Unfavorable conditions because at first it was poorly taught and its real value as mental training was entirely overlooked. Real scientific training is of the utmost value to educated persons. The experimental sciences are best calculated to give this training. Physics and chemistry being the most highly developed experimental sciences, are probably the best ones to use in the high schools. In order to develop the real scientific spirit in the pupil he must have time to be thoro with his experiments, and time to fully understand a topic before leaving it. To accomplish this purpose, with the time devoted to science work in the high school, there should be no attempt to cover a great deal of ground with the class; indeed it would probably be better to devote the entire time to one science, rather than two. If either chemistry or physics must be chosen, probably physics is the better adapted for the purpose, but since chemistry and physics are no longer independent sciences, the ideal experimental science course for the high school will be a combination of the two.

In selecting experiments for the pupil to perform they should, of course, be adapted to the pupil's ability and advancement. Every experiment should either illustrate some important principle or some important property of the thing under consideration. It is usually not worth while to illustrate by experiment phenomena that are occurring in nature about us and are already familiar to the pupil, or can be made so by merely calling his attention to them. Experiments, the successful performance of which require some skill and thought, are the best adapted for furnishing the peculiar kind of training given by laboratory work. Experiments which require little thought are very apt to receive it. The teacher must be in the laboratory to superintend the work of the pupils.

The importance of good teachers cannot be overestimated. Good science teachers must know their subject thoroly, they must love their subject, and they must have an enthusiasm for work. It is impossible to expect the pupil to be thoroly interested in a subject if the teacher is not.

Abstract of paper before Science Department, N. E. A., July 14.

The Educational Outlook.

New York State Society for Child Study.

The second annual, and fourth semi-annual, meeting of the New York State Society for Child Study was held at Utica, N. Y., on Friday forenoon, July 7. The meeting was in connection with the annual meeting of the State Teachers' Association of New York. The program as prepared was arranged as the State Association Section on Child Study.

The general character of this section's meeting was that of a conference, in which open forum for discussion or comment on the part of any member present prevailed thruout the session. This was deemed more appropriate to the needs of the practical teacher who attends the Child Study meeting, than the preparation of long, set papers, in which elaborate theories or multiplied statistics might be presented. In working out the following program, the dryness which ordinarily characterizes annual sessions was thus avoided.

The session was called to order by Vice-President Edgar D. Shimer, of New York city, in the absence of Supt. Griffith, of Utica. The conference opened with greetings and "Confidences over the Pen-point." These "confidences" comprised selections from a vast number of letters recently received from prominent teachers who have contributed to the child study movement by original researches or critical publications. The tenor of these "confidences" was to disparage the unsavory adulation of child study as a means of pedagogic success or scientific knowledge. In addition, Dr. Shimer presented a summary of the opinions of about 8,000 teachers on the advantages and disadvantages of child study. In this polling, most teachers seemed to object to child study on the grounds that it detracted from even work in the school-room, that it interfered with the strictly pedagogical interest, and removed the teacher from the true attitude towards the boy or girl, that it developed false notions as to what constitutes scientific data, and that it was a waste of time, etc., etc.

These "confidences" opened the way in a very apt manner for the discussion of the topic, "What is the Creed of Child Study?" The discussions tended toward an expression of practical experience on the part of those present. Most of these cited, in particular cases, how attention in their school-rooms or in their schools to the characteristics of individual children not only awakened a peculiar interest in children as pupils, but also opened to the minds of these teachers, principals, and superintendents, an entirely new field of experience. Several members reported scattering tests which they applied for their individual benefit, as they said, in gathering the ideas of children and facts about the physical and home life of children. All the contributions to the discussion seemed to accord in the one conclusion that there is a legitimate field of child study for the practical teacher. This field of practical interest, it was agreed, need not necessarily impinge on the scientific efforts to inquire more fully concerning the conditions of mind and body growth in the early years of human life. No attempt was made to formulate, specifically, any set of propositions which might be published as the so-called "creed" of the society. The conference was rather designed to elicit expression of individual creeds. Whether the society will be able to formulate a tentative creed remains to be seen.

The second chief topic set for conference, namely, "How to Study the Individual Child in the Class-Room, and Why?" was not taken up owing to the limitations of time under which the conference convened. The reading of the annual report of the secretary-treasurer was also deferred for a similar reason. This report will probably be published and distributed to the members of the society in the course of the year.

The second chief proceeding of the conference was the reading of the titles of set papers, by the secretary. Instead of having these papers read and discussed by the few present at the annual meeting, the secretary proposed a departure from the usual programs, and merely announced that a number of papers which are already prepared, or in process of preparation, will be published later in the year for more detailed and elaborate study by the members of the society at a time when they can much more easily appreciate the practical values of the papers for their school-room work. To this end, the secretary secured promises of a number of papers which are critical reviews and digests of the several fields to which they address themselves. The specific aim of these papers is to enable the busy teacher to become acquainted with the results of the scattered studies along numerous and different lines of child study. The following titles were announced:

"The Doctrine of Interest in Modern Pedagogy," by Dr. Joseph S. Taylor, Editor New York *Teachers' Magazine*.
 "Reading for Children," by Dr. Sherman Williams, Glens Falls, N. Y.

"Fatigue Among School Children," by Prof. Will S. Monroe, State normal school, Westfield, Mass.

"Mind Training in the Primary School," by Dr. Edward Thorndike, Western Reserve university, Ohio.

"A Few Studies of the Physical Side of the Kindergarten," by Miss Luella Palmer, New York city.

"Child Study in Mothers' Clubs," by Dr. Miriam E. Wheeler, Brooklyn, N. Y.

The secretary hopes to be able to promise a few additional

papers to treat of the different phases of the child study movement. These papers will be printed during the year and distributed among the members of the society.

The society sent telegraphic greetings to the National Child Study meeting in connection with the National Educational Association at Los Angeles, California.

The election of officers for the ensuing year resulted as follows: Pres., Albert Shiels, Mt. Vernon, N. Y.; vice-pres., Supt. H. E. Reed, Little Falls, N. Y.; secretary-treasurer, Prof. Edward F. Buchner, New York university, New York city.

The annual meeting of 1900 will be held at the time of the meeting of the State Teachers' Association at the Thousand Islands, N. Y.

Membership in the society is open to all persons who are interested in promoting the study of children and the dissemination of thought and knowledge which shall tend toward the betterment of the pupil child. The membership fee is 50 cents, payable annually to the secretary-treasurer.

Convention of Oral Teachers of the Deaf.

NORTHAMPTON, MASS.—Among the summer meetings held in different parts of the country, and representing every phase of educational thought, one interesting in character and scope was held in this place June 22-28, 1899. It was the sixth summer meeting of the American Association to Promote the Teaching of Speech to the Deaf. About 200 persons were present at the sessions. There were five daily periods of school-room work of two hours each, of great interest to teachers as showing in a practical way methods and results. Six valuable lectures were given by profound thinkers upon subjects which tended to broaden and enlighten the special teacher as to the educational progress of the day. There were several brief papers by workers from the ranks of teachers of the deaf in schools which led in the work of oral teaching; there were restful afternoons for the tired ones, and excursions for the active ones, and there were pleasant social evenings for all.

The success of the meeting was due to the carefully arranged program and to the spirit of enthusiasm and charming geniality of the president, well known as the distinguished inventor of the telephone, Dr. Alexander Graham Bell.

The program included addresses of welcome, Hon. B. F. Sanborn, Vice-President Corporation of Clarke school; Supt. J. H. Carfrey, Northampton; address by the president, Dr. Alexander Graham Bell; "The Teacher and the State," Prof. John M. Tyler, Amherst college; "University Experiences," A. Lincoln Fehchheimer; "Kindergarten Work in Schools for the Deaf," Edward C. Rider, Malone, N. Y.; "Pictures, and How to Use Them," Miss Florence McDowell, Philadelphia, Pa.; "The Use and Abuse of Pictures," Miss Margaret Stevenson, Jacksonville, Ill.; "Speech as a Medium of Thought," Miss Mabel Ellery Adams, Boston, Mass.; "The Relation of Language Teaching by Oral Methods to Mental Development," S. G. Davidson, Philadelphia, Pa.; "The Association Magazine," F. W. Blake, Philadelphia, Pa.; "Habitual Hearing," Dr. Clarence J. Burke, Boston; "Some Recent Phases of Educational Thought," Thomas M. Ballett, supt. of schools, Springfield; "Memory in Education," Weston Jenkins, Trenton, N. J.; "Rhythm as an Aid in Voice-Training," Miss Sarah Allen Jordan, Boston; "The Walls of Our School-Rooms," Miss Cora R. Price, Philadelphia, Pa.; "Nature Study and Elementary Science," Arthur C. Boyden, Normal school, Bridgewater; "What Shall we do with our Feeble-minded Pupils?" Dr. A. L. E. Crouter, Philadelphia, Pa.; "Voice-Culture," Miss Anna C. Allen, Fulton, Mo.; "How to Correct Defective Articulation," Miss Ella Scott, Mystic, Conn.; "A Few Books," Miss Katharine Fletcher, Northampton; "Laws of Pedagogy," Prof. William A. Clark, Harvard college.

Statistics of the Year.

Supt. Jasper has forwarded to Dr. Maxwell his report of the schools of Manhattan and Bronx. Following are some of the statistics contained therein:

There are 474,755 children of legal school age. The proportion of males and females is about even. The net enrollment last year was 281,341, divided as follows: Training school, 79; high schools, 4,898; elementary and primary schools, 273,125; kindergartens, 3,739. The total average daily attendance was 207,535.

The estimated number of pupils in private and parochial schools was 54,923, distributed among 251 schools. The number of teachers employed during the year was 5,645.

The school libraries show 299,370 volumes, valued at \$113,766. There are 181 school-houses in the two boroughs. The value of the school property, in buildings and grounds amounts to \$29,100,000. Six new school-houses were constructed during the past year.

To Study the Horse.

Thru the efforts of Mrs. Myles Standish, organizer of the Animal Protective League, the children of New York city schools are to make a special study of the horse. Mrs. Standish believes that children taught to love and know horses will be better and more humane in after years for the knowledge obtained. The plan contemplates study along the lines of natural history. Mrs. Standish has secured the co-operation of the school authorities in this work.

Interesting Notes from Everywhere.

Mommson, the German historian, in spite of his eighty-two years, is still a traveler. "For some days past" says the Paris correspondent of the *London Chronicle*, "the white-haired old man with clean-shaven face and keen eyes, looking thru large spectacles, might have been seen actively employed among the manuscripts of the Bibliothèque Nationale in Paris. From nine o'clock in the morning till six in the evening the only survivor of a famous group of historians and archaeologists has been busy reading and copying texts. Mommson has also spent a great deal of time recently in Rome in connection with the *Corpus Inscriptum Latinum*."

HARRISBURG, PA.—State Supt. Nathan C. Schaeffer has again been asked to become principal of the Kutztown State normal school, a position which he held for many years. His friends, have, however, advised him to remain in his present position during the remainder of his term and it is probable that he will do so.

The college women of America will hold a special exhibit at the Paris Exposition in 1900. The work of providing this has been put into the hands of Mrs. Lucien Howe, of Buffalo, N. Y. The exhibit is to illustrate the growth and present status of the higher education of women in America. It will be made up largely of comparative educational and social statistics. It is to be in the hands of the director of the United States Commission not later than Sept. 1.

The statement comes from Japan that a plan has been formed in China to send Chinese students to the Sunrise Kingdom to be educated. It is stated that forty have already left for that purpose.

SUPERIOR, WIS.—It is probable that both manual training and gymnastics will be introduced into the public schools of this city next year. Supt. Elson and several members of the board of education have expressed themselves as in favor of the plan. A few steps in this direction were taken last year in the Nelson Dewey high school. Military drill was carried on during a portion of the year together with some other work in gymnastics.

The University of Pennsylvania has made some additions and improvements to the laboratory of hygiene. The whole interior is changed, and the size of the building is almost doubled. The first floor of the building is occupied by an amphitheatre, with a seating capacity of 300. The laboratory proper is on the second floor. The walls will be of Pompeian brick and hollow.

LIBERTY, O.—The schools of Liberty are to be put under a township superintendent. Each district school is to be graded and a high school is to be located in the central district. The new superintendent, Mr. John A. Wright, will be principal of the high school. He will devote one-half day each week to visiting the outlying schools.

ASHTABULA, OHIO.—Prof. M. L. Hubbard, late of New Lyme institute, has become violently insane. He was recently elected one of the faculty of Hiram college. On going there to arrange for his residence, he found an enemy had written letters of ruinous character to the trustees. The trustees informed Mr. Hubbard his services were not needed. He arrived at home insane.

CAMDEN, N. J.—J. E. Bryan, of Danville, Ill., has been appointed supervising principal of the Camden schools at a salary of \$2,000 per annum, in place of Horatio Draper.

The highest of the graduating honors at Cambridge university, in England, has gone to a Bramin from Bombay this year.

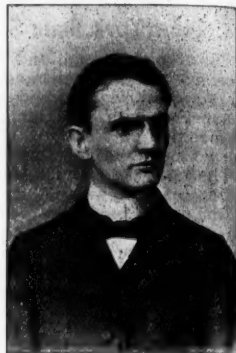
NEW YORK.—A decision of Judge McAdam of the supreme court confirms the right of the board of managers of the House of Refuge to retain boys committed to that institution for reformation till thoroly reformed in their opinion regardless of parents' demands.

CHICAGO, ILL.—The plans for the new School of Pedagogy founded by Mrs. Emmons Blaine, are being rapidly completed. Mrs. Blaine has purchased a sight fronting on Lincoln Park, on the north side, which contains about 305,000 square feet of land. This is an ideal situation for the purpose. The transportation facilities are excellent, the Lincoln Park botanical collection, zoological gardens, and the Academy of Sciences are near by. The trustees are Stanley McCormick, Mrs. Blaine, Owen F. Aldis, Cyrus Bently, and Dr. Henry Fabill.

Charles E. Bessey, the botanist, has been elected chancellor of the University of Nebraska. He has spent most of his life in botanical research, and was, from 1886 to 1897, botanical editor of *The American Naturalist*, and was later connected with Johnson's Encyclopedia. Mr. Bessey is the author of several works on botanical subjects.

KANKAKEE, ILL.—The newly organized vacation school has been doing excellent work in manual training. There are 120 students in the manual training department, a few of whom are girls. The accommodations are excellent.

Dr. Charles D. Nason has recently been placed in charge of the professional department of the Tri-State Normal college at Angola, Indiana. Dr. Nason has for several years been connected with university extension work in Philadelphia, and for the past two years has held the Harrison fellowship in pedagogy in the University of Pennsylvania. He was graduated from Haverford college in 1896.



Chas. D. Nason.

It is reported that Princeton's entering class will be smaller in number than last year's by twenty-four, the decrease being in the academic department. The higher standard entrance requirements are the cause of the decrease. Pennsylvania contributes more students to the entering class than any other state, New Jersey being second, and New York third. The foreign countries represented are Brazil, Canada, Egypt, England, Germany, India, Japan, Korea, and Syria.

The Young Women's Christian Association gave a free summer course in kindergarten training at its rooms on Fifteenth street. The course was not intended to be complete. Instruction was given in the songs and games most useful to mothers and sisters at home, also in basket-making, paper-folding, and weaving.

Educators who have Died.

A dispatch has been received announcing the death from typhoid fever of Nathan Russell Harrington, assistant in the zoological department of Columbia university. Mr. Harrington was a young scientist of promise. He was graduated from Williams college in '93, receiving the degree of M. A. from the same institution two years later. He was on his way to Egypt to explore the Nile valley and collect specimens. He has previously headed expeditions to Alaska and other places along the Pacific coast.

Dr. Janeway Stillé, former provost of the University of Pennsylvania, is dead; Dr. Stillé was born in Philadelphia in 1819. He was graduated from Yale with the class of 1839 and was admitted to the bar. He devoted himself, however, to literary work. In 1866, Dr. Stillé accepted a chair in the University of Pennsylvania and in 1868 became provost. The erection of the new university buildings in West Philadelphia was brought about largely thru his efforts. He received the degree of LL. D. from Yale in 1868.

EXETER, N. H.—Albert Doe, former principal of the grammar school, died July 27, after a long illness. Mr. Doe was for two years a student at Colby university, altho he was graduated from Wesleyan university with the class of '74. He began his teaching immediately upon leaving college, and after holding several positions in the New England schools he was in 1895 appointed at Exeter. Mr. Doe leaves a wife and three sons.

HOLYOKE, MASS.—Eli A. Hubbard, the first superintendent of schools here, died at his home August 8, 1899. Mr. Hubbard had charge of the schools from 1865 to 1873 and held several important educational offices after this until 1882 when he retired. He was born in Hinsdale, December 14, 1814, graduated from Williams in 1842, and entered upon teaching after he left college. Mrs. Hubbard and two children survive him.

PITTSBURG, PA.—Mr. B. C. Jillson, widely known as an educator and scientist died, July 19 at his home in this city. He was at one time professor of geology and chemistry in the University of Tennessee and later professor in the Western University of Pennsylvania, where he remained until he was offered the principalship of the high school in this city. This position he held for nine years, when he resigned to accept the chair of chemistry and geology in the University of Illinois. For several years before his death he was instructor in Pittsburg high school.

NEW YORK CITY.—Miss Margaret Anna MacGeachey, formerly a teacher in public school No. 11, but retired four years ago, died July 15. Miss MacGeachey was a fine musician and she played at the organization meeting of the New York Teachers' Association, held at Cooper institute.

"Like diamonds raindrops glisten." Drops of Hood's Sarsaparilla are precious jewels for the blood which glisten in their use.

THE SCHOOL JOURNAL

(Established 1870), published weekly at \$2.00 per year, is a journal of education for superintendents, principals, school boards, teachers, and others who desire to have a complete account of all the great movements in education. We also publish THE TEACHERS' INSTITUTE, monthly, \$1 a year; THE PRIMARY SCHOOL, monthly, \$1 a year; EDUCATIONAL FOUNDATIONS, monthly, \$1 a year; OUR TIMES (Current Events), semi-monthly, 50 cents a year; ANIMALS, monthly, \$1 50 a year; and THE PRACTICE TEACHER, monthly, 30 cents a year. Also Books and Aids for teachers. Descriptive circular and catalog free. E. L. KELLOGG & CO. 61 E. Ninth Street, New York.



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THE SCHOOL JOURNAL, established in 1870, was the first weekly educational paper published in the United States. During the year it published twelve school board numbers, fully illustrated, of from forty-four to sixty pages each, with cover, a summer number (eighty-eight pages) in June, a private school number in September, a Christmas number in November, and four traveling numbers in May and June. It has subscribers in every state and in nearly all foreign countries.

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Literary Notes.

Mr. E. Garratt Gardner has written a primer on Dante, which will form one of the series to be known as Temple Primers, to be published in England and America by Messrs. Dent & Company, and the Macmillan Company respectively. To the student of the life, the times or the works of Dante this primer will be the most comprehensive work of reference that has been issued on the subject.

Three large editions of *Hugh Gwyeth, A Roundhead Cavalier* have been called for in as many weeks after its publication. In England two editions have been sold in the same time. This is certainly a remarkable record for a book by an entirely unknown writer. The author, Beulah Marie Dix, was born in Kingston, near Plymouth, Mass., in 1876. She received her degree of B. A., "Summa cum laude," with highest honors in English at Radcliffe in 1897, and with the exception of a short story in *Lippincott's* magazine this successful book is the first fruit of her pen. *Hugh Gwyeth* was written during '97 and '98 while studying at Radcliffe for the degree of master of arts.

Ginn & Company are just issuing *A Book of Seventeenth Century Lyrics*, selected and edited by Felix E. Schelling, professor in the University of Pennsylvania. The period covered by this anthology is that extending from the accession of Charles I., in 1625, to the death of John Dryden, 1700. The text is in each case that of the earliest or best edition of the author quoted, and each poem is given entire. Selections are included from the sonnets and shorter poems of Milton, from the rich and varied lyrics of Herrick, Carew, and "the Cavalier Poets," from the devotional poets ranging from Herbert to Marvell and Vaughan, and from the later period of lyrical decline thru Waller to Congreve and Prior. As in *A Book of Elizabethan Lyrics*, to which this is a companion volume, the selections have been drawn not only from the poetry of individual authors, but from plays, masques, and from the song books and miscellanies of the age.

Chicago is apparently destined in the immediate future to become the art center of the country. The Art Institute is out of debt, has one of the most important

museums in the country, and the Art School has distanced all others as is shown by the following list of art schools and the number of pupils enrolled in each: Cooper Institute (New York), 250; Academy of Design (New York), 250; Corcoran Art School (Washington), 250; Boston Museum of Fine Arts, 275; New York School of Art (W. M. Chase's), 285; St. Louis Museum of Fine Arts, 300; Pennsylvania Academy of Fine Arts, 375; Cincinnati Museum of Fine Arts, 475; Art Students' League (New York), 988; Art Institute (Chicago), 1,803.

The new *Methodist Magazine* is coming into a well-deserved popularity. The third number is profusely illustrated and contains articles of general as well as denominational interest.

According to Mr. W. D. Howells, Mr. Thorstein Veblen's book, *The Theory of the Leisure Class*, opens up a distinctly new opportunity for American fiction. Writing in a recent number of *Literature* Mr. Howells says:

"At every step the American magnate discovers that he is less and less in his own country, that he is living in a provisional exile, and that his true home is in monarchical conditions, where his future establishes itself often without his willing it, and sometimes against his willing it. The American life is the life of labor, and he is now of the life of leisure, or if he is not, his wife is, his daughters and his sons are. The logic of their existence, which they cannot struggle against, and on which all the fatuous invective of pseudo public spirit launches itself effectlessly, is intermarriage with the European aristocracies, and residence abroad. Short of this there is no rest, and can be none for the American leisure class. This may not be its ideal, but it is its destiny. It is far the most dramatic social fact of our time, and if some man of creative imagination were to seize upon it, he would find in it the material of that great American novel which after so much travail has not yet seen the light."

Interesting Notes.

Coquelin and Cyrano.

The gossip of Paris centers round the heir and successor to "Cyrano" at the Porte St. Martin, in which Coquelin—ye gods! think of it!—plays *Napoleon*. The other evening at a dinner I met a most charming old Frenchman, with Souvenirs, who told me charming tales of the little Coquelins, Constant and Cadet, as boys in Boulogne-sur-Mer.

Their father kept a *boulangerie*, and as a good baker and good *pere de famille*, he sent his boys to learn the rudiments to "le pere Taverne," who kept an exceedingly elementary school. He considered his further duty done by them when he had clothed them in white drilling, put little white baker's caps on to them, and set them respectively to watching the oven, or trotting thru the streets with baskets of cakes on their heads, or long metres of French bread under their arms or great rounds of the same appetizing necessity slung over their wrists.

It was soon to be observed, however, that Constant, the elder, was a youth of most unfortunate proclivities for one destined for the baker's profession. Like Rosband's *cuisinier poete*, he let the bread burn for verses, but in declaiming, not composing them.

The boys would not have been boys if they had not organized some sort of a "barn circus," in their case amateur theatricals, played in an old abandoned theatre.

"I am organizing for this week a grand *representation extraordinaire*," said the elder Coquelin one day to his admiring little brother.

"What role shall you play?" asked Cadet, awe-struck.

"I shall play all the roles," was the an-

swer, and that might almost be taken as the watchword of Coquelin's career.

He had not boasted over his "representation extraordinaire." He played the leading character in four roles, one tragic, one bouffe, one serious, one sentimental, and so worked himself up in the last that he fainted away as he left the stage.

Cadet, pale and excited, conducted his brother home, and the father, evidently feeling that the hand of destiny was too strong for him, a sentiment somewhat assisted by a general complaint of burned *brioche*s among the bakery's buyers, yielded to these signs of vocation, and sent his son off to Paris with an income of 1,200 francs a year.—*Harper's Bazar*.

Great Engineering Schemes.

This is the age of big engineering enterprises. Some of those mentioned below are under way, some will be soon begun, some may be long delayed. Young men now living will probably see most of them completed. The most important of these are the following:

Panama Canal—Total cost to complete \$300,000,000 to \$500,000,000; work interrupted by financial political disclosures. Efforts at reorganization being made.

Nicaragua Canal—Work begun by American stock company, stopped by panic. Project to complete by Congress at cost of about \$100,000,000.

Irish Causeway—Solid earth causeway from Mull of Cantyre, Scotland, to nearest Irish coast. Project feasible, but prospect of immediate profit not flattering.

Atlantic Deep-Water Canal—From Boston across Cape Cod, by Long Island sound, the Jersey inlets, the coast sounds, &c., to the gulf of Mexico. Useful for peace or war. Project.

Deep-Water Canal—Twenty-four feet deep channel from Chicago thru the lakes to the Atlantic seaboard. Project, with very strong political and commercial backing and extensive surveys.

Irish Sea Tunnel—Dublin to Holyhead, to permit mail trains to pass from London to Galway bay, Ireland, unbroken. Projected and surveyed.

Irish Canal—Galway to Dublin, to shorten Atlantic passage.

Two English Canals—From the Severn to the Thames, connecting Bristol, Oxford, Reading, and London; from the Severn to the Wash, thru Birmingham.

Rhone-Loire Canal—A similar project to connect the Atlantic and the Mediterranean by a ship canal across France. Would save 1,000 miles of the London-Oriental route.

English Channel—Tunnel or bridge is practicable, and money could be subscribed in a week. Tunnel project is backed by the Southeastern railway. Blocked by parliamentary opposition.

Trans-Asian Railway—St. Petersburg to Vladivostok; Manchurian branch to Port Arthur; to be completed early in next century.

Trans-China Railway—American and Belgian Syndicates; Hong-Kong to Peking, thru fertile and populous region. Projected and surveyed in part; plenty of capital.

Cairo-Cape Railway, from Alexandria, on the Mediterranean, up the Nile by Lake Tanganyika and across Matabeleland to Cape Colony; completed nearly to Khar-toum. The conquest of the Mahdists opens the way for the remainder of the road. Would be even longer than the Russian line to Vladivostock.

A Novel Bridge in Bavaria.

A railway recently built in Southern Bavaria practically carries a creek across the railway, instead of the railway across the creek. The stream is a small tributary of the Isar river that in stormy times is swelled to enormous proportions. Every bridge that has been built over it has been carried away. Finally a young engineer offered to solve the difficulty.

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The "Great Wall" to be Torn Down.

Most people will hear with some regret that the great wall of China is to be torn down. The empress by ordering this work has proved that she is not the hide bound conservative that some have thought her to be. The material of which the wall was composed will be used to dyke the Yang-tse-Kiang, the "Water Dragon," which by its frequent overflows has caused China so much sorrow. It is fifteen hundred miles long and contains brick enough to build a hundred cities. The emperor Tsin Chihwangti began it 214 B. C. and it was completed ten years later; it was built as a defense against northern tribes.

A New War Secretary.

Circumstances arose in July that made it evident that Secretary Alger could no longer remain in the cabinet. These were his candidacy for senator from Michigan and his political alliance with Governor Pingree. Mr. Alger had been under fire for many months on account of his conduct of the war department during the Spanish-American war. That there was mismanagement, there can be no doubt. As an excuse Mr. Alger's friends say that when the war broke out he was in bad health and that Gen. Eagan and other army officers made use of the opportunity to run things their own way. It was undoubtedly the wish of the great majority of the people of all parties that Alger should retire. Elihu Root, a noted lawyer, of New York city, has taken the place left vacant by the retirement of Mr. Alger.

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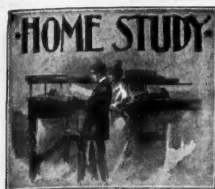
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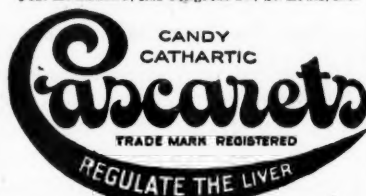
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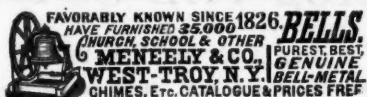
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Assets, Dec. 31, 1898	277,517,325 36
Reserve Liabilities	233,058,640 68
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Dividends Apportioned for the Year	2,220,000 00
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People of Porto Rico.

The population of Porto Rico is probably now about a million, or some 250 to the square mile, making it more densely peopled than any of the West India islands except Barbadoes. The foreign population is only about one per cent., the white people largely outnumbering the black and colored. The natives of the island are usually divided into four classes—those who consider themselves the superior class and rejoice in the name of Spaniards; the peasant class, usually called *gibaros*; the mestizo class of mixed blood; and the blacks.

Those of the Spanish class are mostly the descendants of Spanish soldiers. Some of them are wealthy, and all of them proud, filled with Spanish opinions and prejudices, and manifesting all the stateliness of deportment of the Spanish grandee. From this class come most of the merchants, planters, and professional people of the island.

This class is the only one in the island that has anything beyond the merest rudiments of an education. The women are usually handsome, refined in manners, and amiable in disposition, tho living in the seclusion prescribed for the sex in Spanish countries generally. The men of this class—as, indeed, the islanders in general, from planter to beggar—are gamblers by nature, indulging in the lottery, cock-fighting, and other gambling devices.

The Gibaros.

The lower class of whites constitute the small farmers of the country, and many who in the cities manage to support life by any labor that comes to their hands. They are of old Spanish stock, many of them the descendants of former convicts, but there is some reason to believe they have become modified by an admixture of Indian blood.

They do no more work than they can well avoid. Nature is so prolific that no great amount of labor is needed to obtain the means of living. Those of them who work as laborers on the coffee plantations receive for pay fifty plantains a day. After feeding his family on these, the laborer carries the rest to market, devoting one day in each week to this.

These people, tho indolent, are quick-witted and sagacious, fond of eating and drinking, and very hospitable. Their cabins are thatched with palm-leaves, and often open at the sides, the mild climate calling for no greater shelter. They have no dread of thieves, for they possess nothing worth stealing—two or three bark hammocks, a few pots and cabalash shells, some game cocks, and a machete forming the bulk of their movable property. When the *gibaro* goes about, dressed in a clean shirt, cotton jacket, and check pantaloons, his head covered with a wide straw hat and mounted on a half-fed and overworked horse, with a long sword dangling by his side, he is one of the happiest and most independent of beings.

The Colored People.

The black and colored population forms, with the *gibaros*, the laboring class of the island. These colored people are well treated and seem thoroly content with their lot. The *gibaro*, like the white in any land, is not without the pride of race; but he has no thought of treating his fellow-laborer of dark skin with contumely or contempt. The relations between master and slave were regulated by law, and the result is the present good feeling between the races. In Cuba, however, such regulations were broken at will.

In spite of the fact that the Spaniards made some spasmodic attempt at education, eighty-seven per cent. of the people are illiterate. A school system has been organized under the American plan, which will, in a few years, bring the people much nearer the American standard of intelligence.

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AMERICAN LITERATURE.

There is no question that a knowledge of our national literature is of the highest importance as an essential element of culture, and that teachers especially, ought to be at home here. The course in American Literature will be conducted by Prof. J. Scott Clark, of Northwestern university, who is widely known as the author of Clark's Practical Rhetoric, and of the recently published Study of English Prose Writers, which is, without doubt, the best work for school use and self study published thus far.

NINETEENTH CENTURY HISTORY.

This course will aim to present the achievements of the century just closing. How far has the world moved in the century whose close we are about to see, is the question that will be treated. To teachers' reading circles this course will prove of interest, as it affords unlimited scope for stimulating especial and view-broadening discussion. It will be in charge of Supt. Wm. E. Chancellor, of Bloomfield, N. J., who has for many years made a special and comprehensive study of history, and is particularly well qualified to present the wonderful social and economic progress made in the present century and is a highly interesting speaker and writer.

PEDAGOGY.

The departments of pedagogical study will be continued as heretofore. They will be strengthened in every way, and the articles in each department will be made as far as possible to represent a continuous series of strictly logical sequence so as to fit them even better to the needs of schools and reading circles. As far as practicable, each department will relate to the advance in educational theory and practice during the nineteenth century.

CHILD STUDY.

The department of child study will be devoted to a phase of the subject which the editor regards as of highest importance from an educational standpoint, and that is the study of the individualities of children, with a view of determining their peculiar needs.

EDUCATIONAL PSYCHOLOGY.

The translation of Lange's monograph on Apperception will be continued throughout the year. This work is universally and justly regarded as the greatest pedagogical psychological classic of the century. One translation of the second edition of this work has already been published in this country, but it is so obviously defective in many respects that a careful rendition of the thoroughly revised fifth edition will be found a most desirable contribution to our educational literature.

PRINCIPLES AND METHOD.

Under the department of principles and method will appear a continuation of the study of Herbart's system of education on the basis of his outlines of pedagogical lectures. This work has not been brought to the attention of English-speaking readers thus far, tho it contains the best pedagogical thought of Herbart.

HUGHES' MISTAKES IN TEACHING.

The publishers of EDUCATIONAL FOUNDATIONS have been accustomed each year to give subscribers, as a regular or extra number, some important educational book complete. In pursuance of the plan to make the year 1899-1900, a red-letter year, it has been decided that one number early in the year shall contain, complete, those two great books—*Mistakes in Teaching* and *How to Keep Order*, by James L. Hughes. Nine superintendents out of ten will recommend *Mistakes in Teaching* as the most practical, helpful, common-sense book for the teacher published.

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